NEW REMEDIES.

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EDITORIAL.

PROFESSOR FRIEDRICH AUGUST FLUECKIGER was born on May 15th, 1828, in Langenthal, Switzerland. His father being a merchant, he was destined to receive a commercial education, and for this purpose entered the commercial institute of Noback in Berlin. Soon, however, he was attracted by chemical and geological studies, to pursue which, he matriculated at the University of Berlin, and afterwards continued his studies at Berne. In the year 1847, he took service in a drug store in Solothurn, went afterwards to Geneva, where he made botanical studies during 1850, accepted a pharmaceutical engagement at Strassburg, and in 1851 entered the University of Heidelberg, where he became, in 1852, assistant in the chemical laboratory. From there he went to Paris, where he worked in the laboratory of Prof. A. Wurtz. In 1853 he returned to Switzerland, purchased a drug store at Burgdorf near Berne, which he held until 1860, when he accepted the position of Director of the state pharmacy of Berne, also becoming a member of the Sanitary Commission and of the Board for the Examination of Physicians and Pharmacists. From 1857 to 1866 he was President of the Swiss Pharmaceutical Society, and in 1872 edited the Swiss Pharmacopœia.

Having already in 1861 established himself as Lecturer (Privat-Docent) of Pharmacognosy at the University of Berne, he was created Professor in 1870, and in 1873 accepted a call to the University of Strassburg, where he occupies the chair of pharmaceutical chemistry and pharmacognosy, and director of the Pharmaceutical Institute. There is scarcely any department of pharmacognosy or of pharmaceutical chemistry which has not been enriched by his own investigations or by those of his pupils. His *Lehrbuch der Pharmacognosie* is without exception the best which has ever appeared,* and his last work, "*Pharmaceutische Chemie*," is a masterly exposition of chemical science applied to pharmacy.

As the name of Prof. Flückiger will always call up the memory of his departed friend and co-laborer, DANIEL HANBURY, we have therefore considered it very fitting to give the portrait of the dead scholar by the side of that of the living. The life of Daniel Hanbury is, no doubt, known to most of our readers. Born on September 11th, 1825, he was likewise destined for a commercial career, and began his business training under the firm of Allan, Hanburys & Barry, of which his father was an active member. Having, in 1844, studied at the laboratory of the Pharmaceutical Society, he became intimate with the late Dr. Pereira, with whom he contracted a life-long friendship, and began gradually to publish the results of his researches and investigations on numerous substances of the materia medica. Having access to literary resources which were almost unlimited, being in commercial correspondence with all portions of the globe, and being fortunate in receiving aid from British government officials abroad, he succeeded in collecting a large number of important facts, previously unknown, which shed a new light on many dark portions of the history of drugs. Before his death, which took place quite suddenly on March 24th, 1875, he had, fortunately for posterity, succeeded in finishing his portion of the classic work, *Pharmacographia*,† the other portion of which was written by Prof. Flückiger, and which for both authors is a

monumentum aere perennius.

* A new edition is in preparation.
† A new edition of this is likewise in preparation.

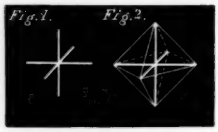
MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

NOTES ON CRYSTALLIZATION.

BY J. U. LLOYD.

From the notes of a series of experiments instituted some years ago, I select a few points which may perhaps be of interest to many, regarding the formation and decay of the crystal. I cannot consume space enough to even touch upon the primary forms of the six systems into which all the different crystalline forms observed may be placed, much less may I notice a few of their numberless modifications. Therefore, in this article, or series, I shall confine my remarks to a substance that assumes the regular form in crystallizing, thus commencing with the first and simplest group.

The fundamental form of this system is the *regular octohedron* with three equal axes (Fig. 1) at right angles. A perfect crystal must have eight equal triangular faces, each of which cuts



the axes at an equal distance from the centre of the crystal (Fig. 2). Many substances crystallize in octohedra or forms of this system, familiar among which may be named nitrate of lead and alum.

My illustrations shall be exact copies of Nature's work, and the true forms of the originals may be produced by any who choose to repeat the line of experiments. I shall avoid all theoretically possible drawings of this group, and shall render my remarks as clear and explicit as possible, systematizing the work, that I may be accompanied by as many as desire to engage in the study of practical crystallization. This is a beautiful study, and I may safely say the formation from solutions of solid bodies bounded by plane surfaces, arranged according to exact geometrical laws, becomes more enticing and wonderful as our search extends.

In the manufacture of crystallized chemicals, many points are understood by workmen relative to the production of marketable preparations. It is well known that conditions necessary for the preparation of good crystals of one salt will not hold in the formation of crystals of another; therefore, let it be remembered that with conditions like those given in this paper, parallel experiments may utterly fail with most other crystallizable substances.

Place an ordinary stone jar, capacity two gallons, inside of a wooden tub of such size that three or four inches of space will intervene. Add one fluid drachm of sulphuric acid to eight ounces of distilled water in a suitable vessel, temperature sixty degrees Fahr., and then six ounces of crushed ammonio-ferric alum. Maintain the temperature of the liquid (a little heat will be necessary, as the temperature decreases about twelve degrees), stirring well until the salt ceases to dissolve. Filter into a small porcelain evaporating dish, raise the temperature of the liquid to one hundred degrees, then place the dish into the jar. Now fill the space between the jar and the tub with ice, cover the surface of the ice with sawdust, and over the entire arrangement spread as perfect a non-conductor of heat as may be convenient, such as a quilt or a few sacks. Allow this to rest quietly fifteen hours, then remove the evaporating dish and quickly decant the liquid. The bottom of the dish will now be found thickly studded with a mass of crystals of which Figure 3 is an accurate

representation of a section produced in this manner. Occasionally, along the sides of the dish may be found isolated crystals which must be at once removed, gently freed from adhering liquid with a piece of soft bibulous paper, placed in a vial and securely corked and removed to a cool situation.

Upon examining the mass of crystals as they rest within the dish, the upper faces will be found generally horizontal. They appear to the eye triangular, excepting where intruded upon by other crystals. This is the natural position taken by upward growing crystals of ammonio-ferric alum, to which, however, there are apparent exceptions, for occasionally protruding portions will appear as represented in Figure 3 by the letters A, B, and C, thus indicating crystals with their axes in different planes. These exceptions I hope to consider at some future day; they bear but a small proportion to the mass, and are seldom met with under circumstances favoring regular growth when time is allowed, so that the crystalline deposit begins naturally and slowly. To some it may appear strange that this upper face is almost constantly horizontal and triangu-

lar, yet when we consider that each of the eight faces of a regular octohedron is an equilateral triangle (Fig. 2), and that the salt we are experimenting with endeavors to preserve this figure, we find it most natural to suppose that the microscopic crystal, when formed, would, as influenced by gravity, have a tendency naturally to fall upon the bottom of the dish and rest upon one of the eight faces, thus necessarily presenting the opposite face upward which must be triangular. The position of the minute crystal first taken, according to the law governing the growth of crystals, is maintained. Finally the bodies of the growing crystals are wedged together, forming a conglomerate of which the upper surface only is visible. This I offer simply as a suggestion, it being the only favorable hypothesis that has presented itself to my mind in explanation of the noticeable fact to which I have alluded. There are other data in connection with the crystallization of this substance which support the idea. It is unnecessary to bring them forward now. Beyond the limit of actual observation, I meet few who care even to venture a theory regarding the construction of the crystal. Indeed the phenomena of one of Nature's most beautiful handiworks—a crystal growing beneath our very eyesight—is as obscure to our minds as the workmanship is beautiful.

CINCINNATI, O., February 13, 1879.

(To be continued.)

Asclepias Syriaca in Dropsy.

DR. THOMAS, of Kentucky, has found *Asclepias Syriaca* of value in dropsy, without reference to the nature of the cause, but especially is it serviceable in engorgement of the liver, being in many cases superior to either calomel, leptandrin, or podophyllin. In no case, when used in doses which come short in effect of causing vomiting, does this remedy fail to cause profuse diaphoresis, and remove dropsical accumulations.

In scrofulous affections he uses it with *Phytolacca decandra*, aided, when needed, with malt extract and cod-liver oil. He employs the following formula:

℞ Strong decoction of Asclepias syriaca ... fl. ℥ xij.
Decoction of Phytolacca decandra ..... fl. ℥ iv.
Whiskey ..... fl. ℥ vi.
White sugar ..... fl. ℥ iv. M.

From one-half teaspoonful to two table-spoonfuls thrice daily, according to age of patient and effect produced.

He uses this formula as a vehicle for salts of iodine or arsenic when required. A tincture made by macerating for fourteen days two ounces of the fresh root thinly sliced is the most convenient form for use as a simple cathartic or alterative and laxative. The infusion is to be preferred when diaphoresis is desired. Not the least anti-malarial or anti-periodic power has been discovered by Dr. Thomas.

MISCELLANEOUS CONTRIBUTIONS FROM THE ORIENT.

BY PROF. XAVIER LANDERER, ATHENS, GREECE.

ON QUINCES.

THE quince-tree (*Cydonia vulgaris* Pers., *κυδώνια μῆλα*, kydonia mela=Cydonian apples, etc.) is a common tree throughout Greece. On the island of Crete there are whole forests of these trees, so also near the Turkish town opposite the city of Salonica in Macedonia. A most abundant supply of quince-seeds could be obtained from many localities if the least care were taken in collecting them; but they are universally thrown away. Only house-wives occasionally preserve them to make quince tea for the children affected with cough or throat troubles. There are various varieties; some are sweetish, others more acrid; the latter are called *struthia** in Asia. The Turkish name of the quince is *aïva*, which has given its name to the Turkish city of Aïvaly in Anatolia, whence large quantities are exported. An intoxicating liquor is prepared from this fruit which was already known to the ancients as "Cydonian wine" (*κυδωνίτης οἶνος*†). A special kind of confection, or quince paste, is also prepared from them, and used as preserve on the table.

ON ONIONS AND GARLIC AS ARTICLES OF FOOD.

One of the most important articles of food of the Greeks and other Oriental nations are the onion (*κρομμύδι*, pl. *-ια*), from *Allium Cepa* L., and the garlic (*σκόροδον*), from *Allium sativum* L.‡ These bulbs are prepared in all possible fashions, boiled, baked in hot ashes, made into a salad with oil and vinegar, or they are eaten raw. A large proportion of the working classes make a meal with a piece of bread, an onion, and a bunch of grapes, to which may be added in summer time a tomato (*τωμάδα*) from *Solanum Lycopersicum* L. Onions are also used very generally in the form of poultice as applications to painful swellings, etc. Both the garlic and the onion are cultivated with great care in gardens, "scorodones" (*σκοροδῶνες*) being the term for garlic-beds, and "cromyones" (*κρομυῶνες*) for onion-beds.

(To be continued.)

* *Στρουθία*, plur. of *στρουθίον*, which occurs latinized, for instance, in *Columella* 5, 10, 19: Cydonium struthium (=sparrow-quince) is a name of the fruit; so also *στρουθόμηλον*, *κυδόνη*, *Κιδόνιον μῆλον* (by confusion of *Σιδόνιον* with *Κυδώνιον*), etc.—ED. N. R.

† Pallad., 11, 20.

‡ Onions, garlic, and radishes were also the *hors d'œuvre* of an Egyptian dinner. According to Herodotus, 1,600 talents' worth (£360,000) were consumed during the building of the pyramid of Cheops. See *Ebers, Uarda*, chapter xxii.—ED. N. R.

The Opium Habit in Michigan.

AMONG the most interesting of the papers published in the Sixth Annual Report of the Michigan State Board of Health is one by Orville Marshall, M.D., on the extent of the "Opium Habit" in that State. Two hundred circulars were sent by him to prominent physicians, and answers were returned from 96 localities, with the following results and conclusions:

"In this State the drug is used principally in three forms: *First*, crude or gum opium; *Second*, sulphate of morphia, called morphine; *Third*, tincture of opium, called laudanum. Morphia is used by many in preference to opium because of its smaller bulk, its certainty and rapidity of action, and because of its use not being accompanied by some of the unpleasant effects of the crude drug. Laudanum is used by opium-eaters when the additional effect of alcohol is desired. In a few instances, McMunn's Elixir is used, which is about the strength of laudanum. Opium inebriates do not confine themselves entirely to one form of the drug. Opium-eaters become morphine-eaters, and *vice versa*. Not infrequently alcohol, chloral, and chloroform are added by the advanced opium-eaters.

"The total number of opium-eaters reported in the places given is 1,313; of these 803 are females, and 510 are males. In Table 1, under the head of opium-eaters are classed only those who use opium and preparations of opium other than morphine. The number of these reported is 630, females 355, males 275. The total number reported as using morphine is 683, females 448, males 235; there being more females than male opium and morphine eaters.

"The population of the cities and villages mentioned in Table 1, including the townships in which they are situated, according to the State census of 1874, was 225,633. The population of the whole State at the same time was 1,334,031. If the number of opium-eaters, including morphine-eaters, in proportion to the population in the places given holds good for the entire States, the total number of opium-eaters, of all classes, in the State would be 7,763. Taking every degree of the habit into consideration, this estimate of the number is probably not too large.

"The average amount of opium consumed by each opium-eater in this State, as reported, is about one ounce avoirdupois per week. A druggist in a small village in Lapeer County writes that he sells on an average one pound of opium per week to fifteen regular customers. Allowing that three pounds of opium per year is the average amount consumed by each opium-eater, it would give 117,068 as the number of opium-eaters in the United States. It is estimated by writers on this subject that one-fifth of the whole amount imported will supply all egitimate uses of opium in medicine; deducting that amount from the average given for the year 1877, and dividing as before, it would give 93,654 opium-eaters in the United States.

"An able writer in an article in the *New York Times*, after making reductions for smoking opium, and allowing one-fourth as the amount used in legitimate medicine, estimates the number of opium-eaters in the United States at 82,696. At this estimate, the proportional number of opium-eaters for Michigan would be about 2,550, which is less than one-third the estimated number based on the reports of physicians. I am informed by a gentleman connected with one of the leading wholesale drug houses in Detroit that the sales of sulphate of morphia by his house average two hundred ounces per week, a large share of which is used in this State. As this house is only one of a large number of the sources of supply, it furnishes some idea of the extent of the habit among us.*

"The large number of 'antidotes for the opium-habit' advertised indicates something of the extent of the vice. These are preparations of opium or morphine in disguise, and are sold by unprincipled scoundrels at an enormous profit. Analysis of these 'antidotes' made by Prof. A. B. Prescott of our State University, and by others, prove them in every instance to contain opium or morphine.

"Instances are given in the replies by physicians of large quantities of the drug consumed by opium-eaters. A man at Petoskey is reported as using two ounces of opium per day. Cases are given of morphine-eaters who use daily a drachm of morphine. The average amount of morphine for a morphine-eater in this State is about one and a half drachms per week. Instances are reported of morphine-eaters who frequently take thirty grains at a dose. A female in the southern part of the State has taken daily a single dose of twenty grains of morphine, for the past eighteen years.

"The age of the oldest opium-eater given was eighty-six years; another was eighty years old, and many were past seventy. A case is reported of a female of twenty who commenced the use of morphine at fourteen. In the past year I attended a child, seven years of age, in its last sickness, who had taken morphine from its birth, administered by its mother, who was a morphine-eater. The child refusing to take it longer, died after three days' illness, suffering all that any old opium-eater would when deprived of his accustomed stimulus."—*Report of State Board of Health of the State of Michigan* for 1878.

* The attempt by Dr. Marshall to estimate the number of opium-eaters in the United States, on the basis of the number reported to exist in Michigan, is open to the criticism that the habit of resorting to a stimulant, of this or any other kind, is influenced by social conditions, which vary considerably in different parts of the country. Persons who in Michigan might resort to opium, would in some of the Southern States make use of tobacco or alcohol to satisfy their craving for a nerve-stimulant.

Azor Thurston

A New Sulphuretted Hydrogen Apparatus.

SINCE sulphuretted hydrogen is one of the most indispensable and troublesome of chemical reagents, no apparatus can be more welcome to the chemist than one which is able to yield an abundant supply of this gas, and at the same time shield the laboratory from invasion by its disgusting odor.

To furnish the gas at any moment, to generate it only when in use, to retain the excess, which, escaping in bubbles from the fluid under examination, contaminates the atmosphere, and at the same time to be easily and cheaply constructed and conveniently used, these are the most desirable qualities of the apparatus, but qualities which have hitherto been found very difficult to combine. Believing that no other form is at once so efficient, so nearly odorless, so cheap, and so convenient in use, I offer the following description of an arrangement represented in the accompanying cut:

Notice, first, the plain but strong wooden frame, consisting of the base board *B*, the standard *T*, supporting the crosspiece *C*, on top of which, near its ends, are two iron pulleys.

Notice, next, two platforms, each provided with four stiff curved iron wires, which meeting at the points *D* and *E*, are fastened to the opposite ends of a strong cord passing over the pulleys at the top. By this means the two platforms, like a pair of scale pans, have a free vertical motion.

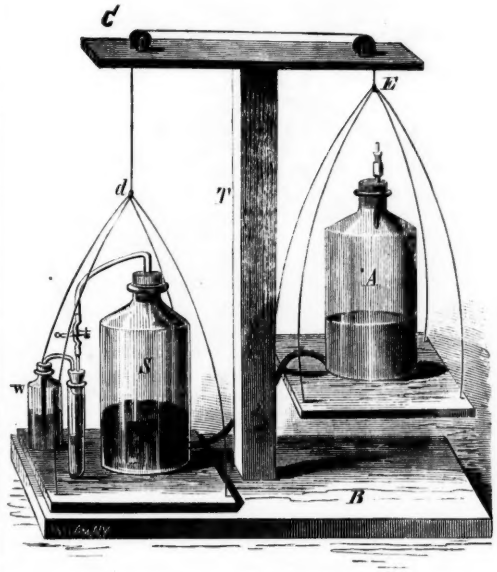
The materials for generating the gas are placed in two bottles *A* and *S*, one on each platform. These bottles, being tubulated near the bottom, are connected by means of a piece of thick rubber tubing, which is rendered more impervious to gas by immersion in melted paraffine. The bottle *A* is to be filled to one-half its capacity with the dilute acid, while in the other bottle *S* fragments of the ferrous sulphide rest upon a thick layer of broken glass or silicious pebbles.

The gas bottle *S* is provided with a tightly fitting rubber or paraffined cork stopper, through which passes the delivery tube, which may be opened or closed at pleasure by means of the usual pinch-cock arrangement shown in the cut.

At the lower end of the delivery tube is a long tapering rubber stopper perforated with two holes. One of these holes is lined with a piece of rubber tubing, the ends of which project a little beyond the stopper. The end of the delivery tube is thrust into this rubber tube until it reaches half way through the stopper. This arrangement permits the insertion of a separate piece of glass tubing into the lower end of the stopper, by which a solution may be fed with gas, and its removal for cleansing after each operation. From the other perforation of the stopper a bent tube passes over into a bottle of ammonia water *W*. The cut represents this apparatus in operation.

The fluid to be tested is placed in either a test tube or flask. For small quantities the tube is very convenient. The operation is as follows:

Insert the short glass tube into the lower end of the stopper. Press the tube or flask containing the fluid up until its mouth is tightly closed by the tapering stopper. Depress the platform carrying the gas bottle, and carefully open the pinch-cock. The acid flowing from the bottle presses the gas from the bottle *S*. It bubbles through the liquid in the tube or flask, and the excess then passes over into the bottle *W*, where it is completely absorbed by the ammonia. Close the pinch-cock, lift the platform carrying the gas bottle, remove the test tube or flask, and also the short delivery tube from the stopper; the apparatus is then ready for the next experiment.



Cooley's Sulphuretted Hydrogen Apparatus.

Whether the apparatus is used continuously or at intervals, provided the joints are well made and the foregoing directions carefully followed, the laboratory will be free from the odor of the noxious gas, except that due to the small quantity which remains filling the tube or flask when it is removed. A single apparatus with bottles of one gallon capacity has furnished the gas needed in the Vassar laboratory for the last three years, the classes numbering from 25 to 50 students. The exhausted acid is easily replaced, and the ammonia removed from time to time, as may be necessary.—LE R. C. COOLEY, PH.D., in *Scientific Amer.*

Œnanthe Crocata L.

THIS is a common plant in the south of England, and extends as far north as Argyle and Elgin in Scotland; its localities are ditches, boggy thickets, osier holts, and the banks of rivers; it is a specially noticeable species by the Thames near London. Abroad, the range of the plant is not extensive; it is confined to the west and south-west of Europe, and does not occur in Scandinavia, Holland, Germany, Russia, Turkey or Greece. The *Œ. apiifolia* Brot., common in Spain and Portugal, and reaching also into Corsica and Morocco, appears to be quite the same species as *Œ. crocata*.

Hemlock Water-Dropwort.

The root is the most active part, but the whole of the plant possesses poisonous properties. It is remarkable, however, that Sir R. Christison found that both this plant and *Cicuta virosa* were innocuous when grown near Edinburgh. *Œnanthe crocata* is commonly known under the name of *hemlock water-dropwort*; but also as *dead tongue*, *water lovage*, and *yellow water-dropwort*.

The stem and root, when cut, exude a yellowish juice, hence the specific name of the plant,* and one of the common names by which it is known. This juice is described by Stephenson and Churchill as being at first milky and afterwards yellow, of a fetid smell, and with an acrid, unpleasant taste. Bentley and Trimen, however, have never seen it milky, nor found it to have a fetid odor. Further observations and experiments on its nature are, therefore, most desirable; for it is clear from the testimony of many persons that this juice is not always yellow. It will probably be found that its color and poisonous properties depend materially upon the age of the plant, and the condition under which it is grown; and that it also varies in the different parts of plant according to the season of the year, etc.

Although the juice is said to have a fetid odor and disagreeable acrid taste, the roots are described as having neither an unpleasant taste nor smell. They have been mistaken for *parsnips*, from which, however, they may at once be distinguished, for while the root of the parsnips is single and conical in form, that of *Œnanthe crocata* consists of several fleshy fusiform tubercules. No analysis of this plant appears to have been published, but a peculiar *resinoid principle* was found by Mr. Gerding in the allied species *Œnanthe fistulosa*, which he termed œnanthin, "of which half a grain, given to an adult, produced long-continued irritation of the fauces with hoarseness, and a grain occasioned vomiting." Mr. C. Fronfield obtained from the fruits of another species—*Œnanthe Phellandrium*—a *volatile oil*, and his experiments further indicated the probable presence of a volatile alkaloid analogous to *conia*.

Notwithstanding its poisonous properties, this plant has been sometimes used, although to a very limited extent, medicinally. Thus the administration of an infusion of the leaves, and the expressed juice, have, it is said, been found useful in the treatment of ichthyosis, lepra, and some other obstinate cutaneous diseases. Dr. Hope, of Edinburgh, also found an infusion of the leaves very serviceable in promoting the menstrual discharge. The roots have been likewise used as poultices to whitloes, and to foul ulcers both in man and horned cattle.

At the present time, however, no part is in use by regular medical practitioners,* and until its properties are more thoroughly known, its employment should not be recommended. It is chiefly interesting from the fact of numerous fatal cases of poisoning having occurred from the roots and other parts of the plant having been eaten in mistake for the similar parts of other harmless plants. It also acts as a virulent poison on horses and some other animals.

Most of the other species of *Œnanthe* found both in Great Britain and the United States are poisonous, although none appear to be so virulent as *Œnanthe crocata*. Some are, however, innocuous, and their roots, especially those of

* *Crocata*, from *crocus=saffron*, meaning "saffron-colored."

* It is used by homœopathists. The mother tincture is directed to be prepared from one part of the expressed juice of the fresh root, gathered while the plant is in flower, mixed with one part of strong alcohol. The mixture, after being well shaken, is allowed to stand for eight days in the dark, and is then filtered.

Œnanthe pimpinelloides, are esteemed as food in certain districts. Burnett says "they are replete with a bland farina, having something the flavor of a filbert, and are often sold at Angers and in other continental markets," but he adds, "although wholesome when cultivated, they are dangerous when wild."

There is no evidence, however, of the roots of this species being sold for food at the present day, although their innocuous properties would appear to be thoroughly substantiated. Some years ago, Dr. Turnbull, of Liverpool, highly recommended an alcoholic extract and essence of the fruits of another species, namely *Œnanthe Phellandrium*,* as very valuable and active remedies in the relief of consumption and bronchitis. —From *Medicinal Plants* by Bentley and Trimen.

Sulpho-Thymate of Sodium and of Quinia.

A THERAPEUTICAL study of these substances has been published by Dr. V. Cozzolino, in the *Giornale delle Scienze Med.*, of Naples. Thymol has been advantageously employed locally in diphtheria, and is superior to carbolic acid for this purpose, as it is much more agreeeable to the patient, and does not produce nausea. For ozæna Dr. Cozzolino considers it the best article he has tried; he uses an emulsion with gum-arabic, one part of thymol to one thousand of emulsion, and injects the nostrils. Combined with unguentum petrolei, or dissolved in alcohol and glycerin, he applies it in favus, tinea, herpes, pityriasis, etc. In gastric catarrh from ferment, putrid diarrhœas, intestinal mycosis, and the like, he gives it internally with excellent results. He also praises the sulpho-thymate of quinia as an efficient antiperiodic.—*Med. and Surg. Rep.*

An Improved Blister.

THE custom of camphorating blisters, with a view of preventing evil consequences from absorption of cantharidin, gives rise to many disappointments. It is pretty certain, by this time, that camphor is useless for such a purpose. Mr. Guyot Dannecy, who has had a large experience as chief pharmacist of the Bordeaux hospitals, has for several years employed sodium carbonate or bicarbonate in place of camphor, and finds it to be much more effective. He prepares blisters as follows:

After the blister has been spread in the usual manner, it is sprinkled over with a mixture of equal parts of sodium carbonate and cantharides, in powder, and the mixture caused to adhere by pressure with the palm of the hand [a sheet of oiled paper being interposed]; the whole blister is then covered with oiled silk.—*Bull. Gén. de. Thérap.*, 1879, 28.

*The seeds (or fruits) of this species, which are known in commerce as fructus (or semen) phellandrii, are highly praised by some continental practitioners as a resolvent, anodyne, and excellent expectorant. They are administered in doses of 0.5 to 2 grams (8 to 30 grains) *per diem*, in powder, pills, or infusion.

MORPHIOMETRIC PROCESSES FOR OPIUM.*

BY PROF. ALBERT B. PRESCOTT.

[*Continued.*]

B. *Process A, modified by the initiatory treatment of the opium with hot benzole.*—Each portion of the opium was digested with heat for one hour, with 35 cc. of benzole, then washed on a filter with a little benzole, dried and worked thereafter as directed in the process first given in this paper. The following results were obtained:

PROCESS B. PERCENTAGES.

	No. 1.	No. 2.	No. 3.	No. 4.	Mean.
a. Cryst. precipitate of crude morphia †...	10.82	11.80	11.66	10.32	11.15
b. Ether-washed morphia..	10.26	11.18	11.08	9.84	10.59
c. By estimating *b* with Mayer's sol..	7.20	7.60	7.40	6.92	7.28
d. From filtrate by amyl alc. and Mayer's sol.....	3.08	2.72	3.60	3.72	3.28
e. Total morphia by Mayer's sol.....	10.28	10.32	11.00	10.64	10.56
f. Subtracting from *b* $\frac{1}{30}$ (Jacobsen)...	9.92	10.81	10.71	9.51	10.28
g. Subtracting from *a* $\frac{1}{10}$ (Hager).....	9.74	10.62	10.49	9.29	10.04

COMPARISON BETWEEN RESULTS A AND B. PERCENTAGES

	Mean of A.	Mean of B.
a. Crude morphia.....	12.42	11.15
b. Ether-washed morphia.....	11.55	10.59
c. By estimating *b* with Mayer's sol.....	8.37	7.28
d. From filtrate, by amyl alc. and Mayer's sol...	2.50	3.28
e. Total morphia by Mayer's sol...	10.87	10.56

It appears, then, that the use of hot benzole instead of cold benzole upon the opium causes lower gravimetric results, and lower results of the sum of the volumetric estimations. Result *b* is lower with each sample, as well as in the mean, from the use of hot benzole. The ether-washed morphia is purer in Process A than in Process B; the former giving of the mean

*A paper read at the Twenty-sixth Annual Meeting of the Amer. Pharm. Assoc., held at Atlanta, Ga., Nov., 1878.

† The weight of these precipitates were in grams:
For No. 1, 0.541. For No. 3, 0.583.
" " 2, 0.590. " " 4, 0.5.

72.74%, and the latter only 68.84% of absolute morphia by Mayer's volumetric estimation. Finally, the morphia precipitation is more nearly complete with Process A than with Process B; the former giving in the precipitate a mean of 77.00%, and the latter a mean of 68.94% of the total morphia obtained by volumetric estimation. According to Cleaver (*Phar. Jour. Trans.*, 1876, vii., 240), morphia is soluble in 2,000 parts of benzole at ordinary temperatures. The results of Process B here seem to show that, when hot, benzole dissolves more morphia. The morphia volumetric yield is 0.0155 grammes less after treatment with 35 cc. hot benzole than after treatment with 50 to 100 cc. cold benzole. I will not venture to surmise why hot treatment with benzole should make the precipitates less pure and less complete, but it was found not only in the mean as above stated, but in each of the four samples the hot benzole treatment gave precipitates less pure and less nearly complete.

Therefore, it appears inadvisable to use the benzole hot, and because morphia is not without waste by cold benzole, the quantity to be used is limited in the process recommended.

C. Hager-Jacobsen's process, as given by Hager, without initiatory treatment of the opium with benzole. (Hager's "Untersuchungen," II., 176.) The materials and directions are essentially the same given in the proposed U. S. P. process, at the beginning of this paper, except that only eight drops of benzole are taken, and the initiatory treatment with benzole is omitted. The time of formation of the morphia precipitate was limited to 3 to 3½ hours. As with process A and B, the crude morphia was weighed, then ether-washed and again weighed; and comparisons are given with crude morphia minus $\frac{1}{10}$ and ether-washed $\frac{1}{30}$. The precipitates were estimated volumetrically and additional precipitates were obtained by 24 hours' standing and volumetrically estimated, but, I regret to say, the final filtrates were not exhausted with amyl alcohol.

PROCESS C. PERCENTAGES.

	No. 1.	No. 2.	No. 3.	No. 4.	Mean.
a. Cryst. precip of crude morphia....	9.96	14.14	12.80	10.28	11.79
b. Ether-washed morphia.....	8.82	12.34	11.82	9.30	10.57
c. By estimating *b* with Mayer's sol..	7.80	8.60	8.20	6.60	7.80
d. From additional precip. by Mayer's sol.....	0.80	9.24	0.80	0.40	0.56
e. Total precip. by Mayer's sol.....	8.60	8.84	9.00	7.00	8.36
f. Subtracting from *b* $\frac{1}{30}$ (Jacobsen).....	8.53	11.93	11.54	8.99	10.21
g. Subtracting from *a* $\frac{1}{10}$ (Hager).....	8.96	12.72	11.52	9.25	10.61

Here the gravimetric mean result of ether-washed morphia is lower than in Process A, and nearly the same as in Process B. The additional precipitates contain in the mean 0.56 p. c. against 0.41 p. c. in Process A. Of the morphia in the last mother liquor (filtrate), no estimation was made. By the volumetric estimation of the ether-washed precipitate, it was, in the mean 73.79 p. c. of morphia, a little purer than by Process A (72.47 p. c.) and purer than B (68.84 p. c.). Judged by process A and B (and D), the precipitation in C was deficient in No. 1, and notably impure in No. 2. Process C makes No. 2 to be 3.52 higher in p. c. than No. 1, A giving the difference 1.20, and B only 0.92 (for ether-washed morphia). The omission of the initiatory treatment with benzole leaves the opium-lime mixture loaded with the opium wax, and renders the filtrations more difficult and the entire operation less satisfactory. Indeed, one might say that the trouble of using the benzole was compensated for, simply by the greater neatness of all the work afterward.

D. *Proctor's Staples' Process* (Pro. Am. Phar. Asso., 1870, p. 130; *Am. Jour. Phar.*, 1871, p. 65; the first of the three methods tried by Proctor). The plan of the U. S. P. preparation of morphia, modified by washing of the opium with benzole.

The proportion of benzole used was 50 cc. for the 100 grs. of opium, the quantity taken by Proctor. The benzole was applied by maceration in a filter and percolation, as directed for the proposed U. S. P. Process Following the proportions and directions used by Proctor, the following results were obtained:

PROCESS D. PERCENTAGES.

	No. 1.	No. 2.	No. 3.	No. 4.	Mean.
a. Cryst. precip. of crude morphia*...	15.52	15.89	15.28	14.00	15.17
b. Ether-washed precipitate.....	14.91	14.87	14.54	13.28	14.40
c. By estimating *b* with Mayer's sol..	11.20	11.11	11.60	10.40	11.08
d. From filtrates by amyl alcohol and Mayer's sol.....	.....Results not satisfactory.				

The results with Staples' process were so evidently incorrect that I gave them only as a confession of failure, the cause of which Mr. Stecher and myself had not time to investigate.

In my own hands, and in the hands of those working under my instructions, Staples' process has usually given results rather lower than Hager-Jacobsen's. In this case, the quantities of the samples were small, as given in the footnote, but the balance was delicate and the work seemed satisfactory. The crude morphia was

* No. 1, from 2.5 grammes opium 0.388 crude morphia.
" 2, " 3.24 " " 0.517 " "
" 3, " 2.5 " " 0.382 " "
" 4, " 2.5 " " 0.350 " "

beautifully crystallized and of light color, as is usual from Staples' process. I can only surmise that the "ether-washed morphia" contained something besides morphia, which can react with Mayer's solution. The results of working the filtrates were still less satisfactory. The filtrate from No. 1 was exhausted with amyl alcohol, this solution evaporated to dryness, the residue dissolved in sulphuric acidulated water, when it took 7.5 cc. of Mayer's solution, indicating 6.00 p. c. of morphia. Then, with Nos. 3 and 4, the amyl alcohol residue was dissolved, as before, in acidulated water, this solution made barely alkaline with ammonia, and a bulky, light-colored precipitate obtained. Filtered out and dried, the precipitate turned dark, coherent and waxy. Dissolved in acidulated water, the No. 3 solution took 3.5 cc. of Mayer's solution (giving 2.80 p.c. morphia), and the No. 4 solution took 4.5 cc. of Mayer's sol. (indicating 3.60 p. c. morphia). The ammoniacal filtrates from these precipitates last above named were washed with benzole, then acidulated and titrated, when that of No. 3 took 3 cc. of Mayer's solution (2.4 p. c. morphia) and that of No. 4 took 2.3 cc. Mayer's solution (1.84 p.c. morphia). These benzole washings, evaporated and their residue dissolved in acidulated water and titrated, used for No. 3, 1.8 cc. Mayer's solution (indicating of narcotina 1 53 p. c.), and for No. 4, also 1.8 cc. (same p. c. narcotina given by No. 3). I would advise, in extracting filtrates from Staples' process with amyl alcohol, first to exhaust them with benzole, as was done for the estimations tabulated below. Narcotina, when free, is sufficiently insoluble in water, but narcotina partially combined may dissolve in the water solution of opium to a notable extent. If the crude morphia of Process D *a* was loaded with narcotina, the ether-washing may have been insufficient to remove all narcotina, and the weights *b* may have represented this impurity.

May there be something besides alkaloids which precipitates Mayer's solution, obtained in the amyl alcohol extract from Staples' filtrates (though not so obtained from filtrates of Hager's process)? Dragendorff calls attention to the fact that an aqueous extract of opium contains substances, aside from known alkaloids, which precipitate Mayer's solution, whatever these substances may be. Some results of the titration of water solutions of opium, acidulated with sulphuric acid, were found to correspond to 50 and 60 p. c. of morphia (Werthbestimmung, p. 88). Again titrating ammoniacal filtrates from opium, Dragendorff reports that when additions showing 19 p. c. and 21 p. c. of morphia had been made, the precipitates were still incomplete. Certainly no results so widely out of the way are obtained by titrating the amyl alcohol extract (a method used by Dragendorff himself) but it is desirable to know more positively whether amyl alcohol (always aqueous) takes up anything at all to precipitate Mayer's solution besides alkaloids. The work recorded in the next paragraph was entered upon before this question had defined itself in our investigations, but, although undertaken as a measure of the morphia left in Hager's filtrates and Staples' filtrates, and not as a test of the accuracy of amyl alcohol extraction, nevertheless it may be said that the results have such reasonable proportions as to do credit to the amyl alcohol extraction by which they were obtained.

Comparative estimation of the morphia remaining in a set of the final filtrates of Hager's Process and of Staples' Process, the estimation being done by Mayer's solution applied to amyl alcohol extracts, and the extraction with amyl alcohol being preceded with benzole washing in case of the Staples' filtrates. The filtrates were obtained in a set of assays of tincture of opium, done by Mr. Henry Heim, in parallel operations by Hager's and Staples' Processes.* The work upon the filtrates, done by Mr. Stecher, was as follows: The filtrates of Staples' Process were first exhausted with two successive portions of benzole; those of Hager's Process were treated directly with the amyl alcohol, the total alkaloid so obtained being estimated as morphia. In every case, the amyl alcohol was used in three portions, successively, of 15 cc., 10 cc., and 5 cc.—30 cc. in all, each portion being shaken with the opium filtrate in a tube, the mixture left to separate, and the clear amyl alcohol layer drawn off. The united solutions (amyl solutions) were evaporated to dryness on a steam bath, the residue dissolved in sulphuric acidulated water, and this solution titrated with Mayer's solution. The results were as follows:

FROM FILTRATES LEFT IN VALUATION OF OPIUM TINCTURES.

With Hager's Process.				With Staples' Process.			
No.	Filtrate	Morphia.	Morphia per cc.	No.	Filtrate	Morphia.	Morphia per cc.
	Cc.	Gram.	Millig'm		Cc.	Gram.	Millig'm
1	45	0.046	1.02	1	40	0.100	2.50
2	50	0.100	2.00	2	40		
3	33	0.060	1.82	3	40	0.110	2.75
4	40	0.070	1.75	4	35	0.062	1.77
5	38	0.080	2.10	5	30	0.090	3.00
6	40	0.060	1.50	6	35	0.096	2.74
7	40	0.096	2.40	7	40	0.108	2.70
8	35	0.094	2.70	8	36	0.072	2.00
9	35	0.052	1.51	9	37	0.080	2.16
10	40	0.094	2.35	10			
11				11			
12	40	0.090	2.25	12			

*Valuation of tincture of opium, twelve samples, in parallel assays by Hager's Process and Staples' Process, reported by the writer from work by Henry Heim (See February number, page 39).

The earlier process of Hager was used, differing from "Hager's-Jacobsen's" in taking only 5 grams of opium or the residue by evaporating an equivalent quantity of tincture, washing the residue into the lime-opium solution, and concentrating the latter to about 25 grams before adding the ammonium chloride (and benzole and ether).

Mean morph. per cc. for 8 Nos., omitting 2, 10, 11, 12,—Hager's, 1.85 milligm.: Staples, 2.45 milligm. For the total 436 cc. of 11 Nos., with Hager's Process, the mean was 1.93 milligram morphia per cc. of filtrate. The solubility of morphia in water, and to a greater extent in the mother liquor of morphiometric assays, even when no excess of ammonia is present, has been alluded to in a foot-note under Process A. As the filtrate of Staples' Process is alcoholic, it ought to dissolve more morphia than the filtrate of Hager's Process. Taking the solubility of morphia in pure water as 0.001 gram per cc. it is indicated by this work that Hager's filtrates dissolve, in the average, 1.9 times more than water does (the extremes being 1.02 times, and 2.4 times); while Staples' filtrates dissolve, in the average, 2.45 times (in extremes 1.77 times, and 3.0 times) more than water dissolves. As having a bearing on the comparison of Hager's Process with Staples', it may be quoted here that Mr. Heime's gravimetric results, in valuation of tincture of opium, give as the average with 12 samples, by Hager's Process, 3.103 grs. ether-washed morphia per fluid ounce of tincture; by Staples' Process 2.84 grains morphia per fluid ounce of tincture.

E. Schachtrupp's process for estimation of Morphia and Narcotina. (*Zeitschrift für analyt. Chemie*, 1868, vii. 509.) A weighed amount of opium (5 grams) is covered in an evaporating dish (porcelain) with a solution of sodium carbonate, heated on the water-bath, and when semi-solid, evaporated to dryness. The dry mass is transferred to a perfectly dry beaker or flask, covered with benzole, agitated and heated moderately, then decanted on a filter, and the residue treated two or three times with portions of benzole and filtered. The quantities of benzole were not stated by Schachtrupp. The solubility of morphia in benzole has been discussed under "Process B." It is advised to use in all about 40 cc. for 5 grams of opium, but a good deal more was used in our operations. (The benzole solution is reserved for estimation of the narcotina). The dried filter with its contents is now added to the residue in the flask or beaker, and the whole warmed to expel the last trace of benzole. Amyl alcohol is now added to the dry residue in the flask, the mixture stirred, and heated to near boiling, and while hot decanted upon a filter, adding successively two more portions of amyl alcohol (Schachtrupp does not specify how much amyl alcohol to use). Set the mixed filtrates aside for a few hours. Decant from crystals of crude morphia; distil the solution to its one-third; add dilute hydrochloric acid, in the retort, and shake. Remove the amyl alcohol, the upper layer (from the water solution of morphia hydrochlorate, below); wash the decanted amyl alcohol with two or three additional portions of the diluted acid, and pour the united acid water solutions upon the crystals of crude morphia, previously separated to dissolve them. (Schachtrupp does not give strength or quantities of the dilute hydrochloric acid. Mr. Stecher used 4 portions, and found the last to take up a notable proportion of morphia. Dragendorff states that all the morphia can hardly be obtained in this way. It would be better to evaporate the amyl solution to dryness, and then dissolve in acidulated water, as done by Mr. Stecher in extracting mother liquors with amyl alcohol, described under Process A.) The acidulated water solution of morphia is now evaporated on the water-bath, to a weight double that of the opium taken, filtered, the filtrate treated with ammonia in slight excess, covered loosely, and set aside for 24 hours. The precipitate (at first bulky and afterward growing crystalline) is collected on a filter, washed several times with distilled water, and dried and weighed. (The gravimetric morphia of this process retains considerable color.) The reserved benzole solution is evaporated to dryness, the residue dissolved in sulphuric acidulated water, and the solution titrated for narcotina with Mayer's solution. Each cc. of the latter precipitates 0.0213 grams of narcotina.

The following results were obtained by Schachtrupp's Process.

Process E.	Percentages.					
	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	Mean
a. Colored morphia precipitate....	7.53	8.82	11.16	10.27		9.44
b. By estimating *a* with Mayer's sol.	4.80	5.60	10.20	10.00	7.00	7.52
c. Benzole alkaloids estim. as narcotina by M. S.....	14.91	10.44	9.58	9.80	9.04	10.15

Flückiger & Hanbury mention percentages of narcotina from 1.30 to 10.30. Dragendorff gives results for narcotina, from 8.8 to 14.7 per cent (Werthbestimmung, 83). As previously mentioned, Mr. Stecher used more benzole than should be used, and considerations of the benzole solubility of morphia make it certain that a notable portion of morphia was obtained with the narcotina.* No work was done to separate morphia from the other alkaloids dissolved by the benzole; and it can only be declared that

then leaving 24 hours for precipitating the crude morphia. Dragendorff's *Werthbestimmung*, 91.

For Staples' Process, that given by Proctor, Pro. Am. Pharm. Asso., 1870, 131, was followed, evaporating the tincture to one-half and proceeding as directed, but leaving four days for the crude morphia to precipitate.

* Benzole dissolves narcotina, codeina, papaverina, and narceina (slightly).

the results are untrustworthy, and the process of Schachtrupp an inexpedient one.

The trial of process E gives additional evidence that the initiatory treatment of the opium with benzole cannot be used to remove all the narcotina, while leaving all the morphia behind. To dissolve all the narcotina which is partly held in feeble combination, alkali must be added* as in Schachtrupp's process, and then the use of enough benzole to take out the wax, etc., seriously diminishes the morphia. The office of the benzole is to free the opium of caoutchouc-like matter, color, etc., and the additional service of making it unnecessary to purify the crude morphia crystals seems to be more than benzole can accomplish.

The advantages of preliminary benzole treatment appear from the results of process C, wherewith they have been named. As to the results by use of the benzole hot, see Process B. It can hardly be said that the benzole treatment is very important; but as it is otherwise required in the Hager-Jacobsen's process, the preliminary use of the agent does increase the number of materials to be taken.†

The purificatien of the crude morphia crystals is best done, I believe, by the ether, non-alcoholic or water-washed. I suggest to put water-washed ether in the list of reagents, unless otherwise included, with direction to wash shortly before use, because any pharmacist can, from any grade in stock, in a few minutes make a uniform quality of ether, free from those common impurities most objectionable for use as a solvent, alcohol and acetic acid, the latter derived from keeping.

With the Hager-Jacobsen's process as proposed for the Pharmacopœia, I regret the unavoidable length of the directions, giving an appearance of complexity, perhaps forbidding to the pharmacist. In execution of the process, there is nothing difficult, all the operations define themselves sharply and satisfactorily; and there is little more weighing and much less waiting than in other processes. Some features of leading processes may be compared as follows:

Process.	Quantities of Filtrate to one of Opium.	Time required.
Hager-Jacobsen's....	1 to 10	5 to 6 hours.
Do. do. with benzole prelim. treatment.. ...	1 to 10	6 to 8 "
Staples'-Proctor's....	1 to 6 or 7 alcoholic.	48 "
Br. Pharmacopœia...	1 to 2½	50 "

* Obtaining, by Mayer's solution, from the benzole extract of a sample of dried opium (not made alkaline) 2.3 per cent of narcotina; I found from the similar extract of another portion, which was made alkaline, 3.3 per cent of narcotina.

† I hardly need mention that Mr. Wm. Proctor recommended the adoption of the benzole treatment, referring to its use by Flückiger, and that the modification (of the Staples' process) very properly bears the cognomen due to Mr. Proctor's important report on morphiometric methods.

As to the purity of the morphia weighed, considered with the incompleteness of its extraction, and as to deducting a fraction for impurities, I would only add, to what is given under Process A, a remark of Dragendorff (Werthbestimmung, 92) to the effect that, for ordinary purposes, the foreign substances left in the (chloroform washed) crystals by Hager's process may be left to balance the loss in mother liquor and washings. The reports made by careful analysts in different parts of the world render it evident that exact morphiometric methods for opium have not been obtained, and the obstacles in the way towards exactness appear only the more apparent in the work I have undertaken. Indeed, absolute exactness is rarely if ever reached in human science. We must be patient with imperfection, always measuring our results by the truth beyond them, as nearly as we can, and we must work heartily for the uses of mankind with such approximate measures as we have.

University of Michigan, July 9th, 1878.

Celloidin, a Substitute for Gun-Cotton.

A new kind of nitro-cellulose has lately been placed on the market by the chemical works of E. Schering in Berlin. This has been named *celloidin*, and appears to be a very useful substance, both for the photographer and for the pharmacist. It is put up in plates, which are neither explosive, like gun-cotton, nor readily inflammable. Ignited it burns like paper, and when heated in a test-tube, it chars slowly. Its transport by rail, wagon, or mail, is therefore unattended with danger.

This substance is soluble in a mixture of alcohol and ether in any proportions, and yields a perfectly clear solution, leaving no residue. Each plate weighs about 200 grams (7 oz.), and represents, when completely dry, exactly 40 grams of pure celloidin. For preparing medicinal collodion, one plate of celloidin is dissolved in 720 grams of ether, without the addition of alcohol, which is already contained in it in sufficient quantity.

It is probably produced by moistening a special kind of gun-cotton with a mixture of alcohol and ether, whereby a fraction of the gun-cotton is dissolved to collodion; the latter permeates the undissolved fibres, and the whole is pressed into cakes.—*Schweiz. Wochensch. f. Ph.*, 1879, 20.

Hypodermic Injection of Salicylic Acid in Erysipelas.

Prof. Ferdinand Peterson, of Kiel, states that he has thrice arrested the progress of erysipelas by injecting a concentrated solution of salicylic acid under the healthy skin surrounding the diseased part. Several such injections were made simultaneously in each of the cases. He does not, however, positively assert that the good effect was simply owing to the operation.

Simple Method for Preparing Antiseptic Dressings.

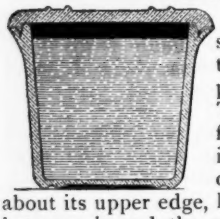
MR. E. W. EILAU sends the following communication to the *Maryland Medical Journal*. "At the suggestion of Prof. Tiffany, I made several experiments in order to prepare, in a short time and with as little expense as possible, a material approaching in character to that found in the market. The formula which I adopted after making a number of experiments, and which gave me the best result is :

Boiled linseed oil	℥ iv.
Yellow wax	ij.
Rosin	iv.
Spts. turpentine	viij.
Calvert's carb. acid No. 2	ʒ i.

Melt the oil, wax, and rosin together over a water-bath, and add the turpentine and carbolic acid. Then take a piece of tarlatane, sixteen yards long by two yards wide, and immerse it in this menstruum, while still fluid. Then pass it through an ordinary clothes wringer. Pass it through the wringer three or four times, or until no more of the mass can be squeezed through, then fold it and wrap it in oiled silk or carbolized paper, and preserve it in a tin box carefully excluded from the air to prevent the evaporation of the carbolic acid.

"The article prepared in the above manner is equal in beauty to that found in the market, and sold at twenty-five cents per yard. The process above described will yield a material which is soft, pliable, and does not become sticky when brought in contact with the body. As far as I understand, the expensiveness of the commercial article has prevented its introduction into general use in hospital and private practice. The bandaging prepared by the above manner costs eight cents per yard, or less than one-third the price of that found in the market."*

Self-Sealing Jar.



A RECENT patent for a self-sealing fruit-jar seems to be suited likewise for pharmaceutical purposes. The adjoining cut is perfect on one side only, and is intended to show a glass or porcelain jar with a lip about its upper edge, having an angular groove between it and the edge of the jar. Into this grove is bedded a cord saturated with a resinous substance, such as Canada balsam or pitch. The top of the jar has a projecting angular ring on its under surface, and being heated this can be imbedded in the packing placed in the grove. When it has become cooled the union is sufficiently firm, but on heating the top again it is loosened, and can readily be taken off.

* In Lister's formula the proportion of carbolic acid to the other ingredients is 1 in 13, namely : 5 parts resin, 7 parts paraffin, and 1 part carbolic acid. The above formula of Mr. Eilau reduces this proportion to 1 in 19, which we regard as too dilute.—ED. N. R.

German Treatment of Croup and Diphtheria.

THE following treatment of croup and diphtheria is advocated by Dr. Taube, in the *Deutsche Zeitschrift für Prakt. Medicin*, September, 1878. An ordinary inhaler is to be taken, full of water, into which is to be put each time it is used fifteen drops of the oil of turpentine. The child should be wrapped in a sheet and placed on its mother's lap, while another person holds the apparatus for eight or ten minutes, about three inches from its mouth. It is as well to grease the child's face and to protect the eyes with a cloth. At first the inhalation should be practised every hour, day and night, the favorable result of which will soon be apparent. With regard to the carbolic acid injection, it should be made into the submucous tissue, half the contents of an ordinary hypodermic syringe, containing a weak solution of the acid (3 to 1,000) being injected two or three times a day into the tonsils. Subject to certain modifications, as the case may require, Taube would recommend the following plan : 1. Hourly inhalations of the oil of turpentine throughout the day and night. 2. Injection of carbolic acid two or three times a day. 3. From one to two teaspoonfuls of Port wine or Madeira, to be given every hour; cold compress to the neck ; two or three times a day a warm bath with the cold affusion ; and small doses of the infusion of digitalis, to which a little benzoic acid is added. The nourishment should consist of eggs and milk only. Constipation is to be met with linseed oil, and for the separation of the false membrane, sulphate of copper, or tracheotomy, with turpentine inhalations through and above the canula.—*Medical and Surgical Reporter*.

Treatment of Asthma by Iodide of Potassium Spray.

DR. EVRARD, of Orsennes, has obtained very satisfactory results, in a severe case of asthma, from the use of a spray of iodide of potassium. The patient, a man thirty years of age, had suffered for eight months from daily attacks of asthma, and had also been subject to chronic bronchitis for five years. At the time the treatment was begun, he had three or four attacks a day, and was reduced to a pitiable condition. After assiduous use of the spray for eight days, the asthmatic attacks had almost entirely ceased. Eighteen months have elapsed since then, but the patient has continued to use the spray, and the attacks have not recurred. The strength of the solution used was 1 to 20. The periods of inhalation were short, but frequently repeated; the quantity of the drug thus administered by the bronchi being about the same as that given internally by Professor Sée, namely 1.5 to 3 grams (23–46 grains) per day (see NEW REM. 1878, p. 174).

ANALYSIS OF CRYSTALLIZED BERBERINA PHOSPHATE.

BY HENRY B. PARSONS.

THROUGH the courtesy of Mr. George E. Willmarth, of Cincinnati, Ohio, I came into possession of a fine sample of crystallized berberina phosphate. The salt is in beautiful canary-colored crystals, which are moderately soluble in strong alcohol, very freely in cold water.

The method of preparation, as described by Mr. Willmarth, was as follows: The properly powdered root of Hydrastis Canadensis was exhausted with water, the liquid evaporated to a good, firm extract, this extract treated with several portions of alcohol of 95 per cent, filtered, the alcohol recovered by distillation, and the residue dissolved in a small amount of distilled water. To the clear liquid thus obtained was added a large excess of P. and W.'s dilute phosphoric acid, the liquid concentrated by evaporation on the water-bath, and set aside for twenty-four hours. The crystals thus formed were washed free from acid, on a filter, with alcohol of 94 per cent, then dissolved by heat in alcohol of same strength. The dish was set aside for some time to allow crystals to form.

These crystals were slightly washed with strong alcohol, carefully dried at a low heat, and kept in a sealed bottle.

By this means the salt produced was entirely freed from other substances occurring with it in the root.

In making this analysis I have followed essentially the process described by Mr. Wrampelmeier (NEW REMEDIES, Aug., 1878, p. 226); hence the methods of analysis will not be repeated in detail.

1. *Action of Heat.*

Upon heating the crystals to 60° C., they become orange yellow; an increase of the heat to 110° to 120° C. causes no further loss of weight.

The percentages lost at 60° C. were: 1.565%
1.636%
1.543%

Average 1.581%

It is evident that the loss of weight was moisture, and that the crystals are anhydrous. It will be noticed that this salt becomes orange by *loss* of moisture, while that analyzed by Wrampelmeier becomes orange by *absorption* of moisture. These crystals, also, are not hygroscopic, while the amorphous salt greedily absorbs moisture.

2. *Estimation of Berberina.*

a. By precipitation with platinic chloride.

The precipitate from .1028 gram of dried crystals, when dried in a platinum cone at 100° C., weighed .1025 grams, equivalent to .0634 of berberina ($C_{20}H_{17}NO_4$), or 62.83 per cent of berberina.

b. By residual platinum, after ignition.

The above precipitate left, upon ignition, .0187 of platinum, equivalent to .06355 of berberina, or 62.93 per cent of berberina.

c. By estimation of total nitrogen.

.2108 gram was ignited with dry soda-lime; the evolved ammonia was passed through an accurately standardized, decinormal solution of oxalic acid, of which 4 cubic centimetres were neutralized. This amount of acid represents .0056 gram of nitrogen, or .1340 of berberina, equivalent to 63.56 per cent of berberina.

We have then for percentages of berberina:

a. Calculated from precipitate by platinic chloride 62.83%
b. Calculated from residual platinum 62.93%
c. " " total nitrogen . 63.56%

Average . . 63.11%

3. *Estimation of Phosphoric Acid.*

The dry salt was ignited in a large, covered platinum crucible with excess of potassic nitrate and potassic carbonate, both free from phosphate, the mass dissolved in dilute hydrochloric acid, and carefully precipitated with magnesia mixture.

a. .200 gram dry crystals gave of magnesium pyrophosphate .0873 gram, equivalent to 38.55 per cent of phosphoric acid (H_3PO_4) in the crystals.

Another experiment gave 37.15 per cent of phosphoric acid. These unexpectedly high results were afterwards explained by the unsuspected presence of a little aluminium chloride in the magnesium chloride used. The average of these two estimations is 37.85 per cent, which may properly be regarded as a little too high.

From these analytical results I am led to believe that the composition of crystallized berberina phosphate, prepared as stated, is $C_{20}H_{17}NO_4.2H_3PO_4$. These results are here compared with theoretical percentages.

Berberina Phosphate.	*Theory.*	*Found.*
Berberina ($C_{20}H_{17}NO_4$)	63.09	63.11
Phosphoric acid ($2H_3PO_4$)	36.91	37.85
	100.00	100.96

DEPT. OF AGRICULTURE,
WASHINGTON, D. C., Feb. 20th, 1879.

Grindelia robusta in Phthisis.

GRINDELIA ROBUSTA, the remedy which has been introduced in the treatment of spasmodic asthma, has been used at the Charity Hospital, N. Y., with favorable results, but in a manner different to what might have been expected. It was supposed that, if the agent relieved the spasmodic condition in asthma, it might prove of service in the cough of phthisis, and for this purpose it was given to a large number of patients in the medical wards. It was also administered in a case of asthma. In the asthmatic patient no benefit was obtained, but in the phthisis cases considerable relief to the distressing cough was noticed in the majority of cases.

A New Gas Valve.

In using a water-bath, it may be a great convenience to have some means for regulating its temperature without the necessity for constant watching. A number of regulators have already been in use, and the latest one is here shown.

A glass tube is provided with a diaphragm at A, from the centre of which a smaller tube B extends nearly to the bottom of the larger one. Near the top of the large tube is a side connection C, for attachment of a gas-tube, and through a tightly-fitting cork a third tube D is made to perforate. Near the lower end of the latter tube is a small hole, as shown in the figure. The cork and tube D being removed, *clean* mercury is to be poured in until it rises above the lower end of the tube B and C and the air in the lower part of the tube A is compressed until the mercury is sustained above the diaphragm as represented. The lower end of the apparatus is then immersed in the water-bath; the tube D is connected with the Bunsen burner under the bath and the gas is turned on. When the temperature of the bath has reached the proper point the tube D is pushed down through the cork until its lower end just touches the mercury. The little hole in the side of the tube D then allows enough gas to pass to the burner to keep it alight. When the temperature of the bath falls and the mercury and air in the bottom of the large tube have contracted, the lower end of the tube C is uncovered, permitting a freer flow of gas. The expansion of the mercury and air again cuts off the flow of gas excepting what can pass through the pin-hole, and so the bath is kept at a pretty uniform temperature for any length of time. Mr. H. Weinhagen, of 152 William Street, in this city, made the valve from which the adjoining illustration was taken and can furnish them for about $1.00 a piece.

Sodium Ethylate, or Caustic Alcohol.

At the meeting of the British Association for the Advancement of Science, held in September, 1870, Dr. Benj. W. Richardson made a report on the use of "sodium ethylate" as a caustic, which appeared to have some advantages in certain cases. This substance is prepared by dissolving clean, bright metallic sodium in *absolute* alcohol. The compound of sodium and ethyl hydrate may be obtained on evaporation, and again brought back into solution; the best proportion would be 1 part of the solid ethylate to 1½ parts of absolute alcohol. The formula which Dr. Richardson generally uses is the following:

Put ½ fl. ℥ of absolute alcohol (sp. gr. 0.795) into a 2 ℥ test-tube. Set the latter into a water-bath, at a temperature of 50° F., and add, in small pieces at a time, cuttings of pure metallic sodium. Hydrogen gas is given off. Then add more sodium until no more gas escapes, raise the temperature of the water in the water-bath to 100° F., and add a little more sodium. When the gas again ceases to escape, stop adding sodium, or if the fluid, which by this time will be of a gelatinous consistence, should crystallize, then stop. Afterwards cool to 50° F., and add ½ fl. ℥ more of absolute alcohol.

The product is best dispensed in a bottle furnished with a glass stopper ending in a pointed glass rod, which descends into the fluid. The fluid is best applied from the glass point. It may, however, be very neatly applied by means of a clean quill cut like a pen, and prepared with a fresh nib each time. The glass brush is very inadvisable. The small fibres break off, and, in one instance, a portion of fibre left on the surface touched with the ethylate caused great pain and trouble.

Dr. Richardson was first led to use this caustic by theoretical considerations. It was inferred, namely, from the general nature of these bodies, that sodium ethylate applied to a vascular living tissue would remove or absorb water from the tissue, thus converting the compound into sodium hydrate and alcohol; further, that the sodium hydrate would act as a caustic, and the alcohol would produce coagulation, while at the same time it would prevent decomposition of the destroyed organic substance.

Care must be taken not to use the ethylates too concentrated, as the caustic or destructive action is then too severe, and may be followed by hæmorrhage. Especially is this to be guarded against when using potassium ethylate. The above given formula for sodium ethylate is about of the normal strength for ordinary use.—From *Pharm. J. and Trans.*, Dec. 14th, 1878.

History of Alum.

The arts of dyeing and tawing (preparation of so-called white leather), which involve the use of alum, became developed already in ancient Greece. The term στυπτέρια (*stypteria*) was used to denote, among other things, *alum* (*Germ.* alaun), and the latter word may perhaps be itself related to the Greek word ἅλς (*hals*), the salt. Alum, or at least aluminic sulphate, was gathered since the year 580 before Christ by Greek settlers upon the Liparian isles, and was transported to the Phœnician dye-works of Panormos (to day Palermo). It has also been found in several localities of Asia

Minor already in early times. The Arabian chemists of the 9th century obtained it from the neighborhood of the city of Urfa (between Aleppo and Diarbekir in Mesopotamia), or Orfa, the ancient Edessa, called Rochha by the Arabs. The alum, which is prepared here from alunite,* and which was much used in Europe even in the last century under the name *alumen rochæ* (*French:* alun de Roche), formed an important article of import of the Italian commercial republics. Genoese noblemen, in 1275, obtained possession of the large alum-works of Fokia, the ancient Phokaia to the north of Smyrna. In Italy itself its preparation was carried on already in the 12th century, upon Ischia and at other points in the neighborhood of Naples. The so-called Roman alum, formerly in great demand on account of its purity, was prepared since 1462 in Tolfa, near Civitâ vecchia.

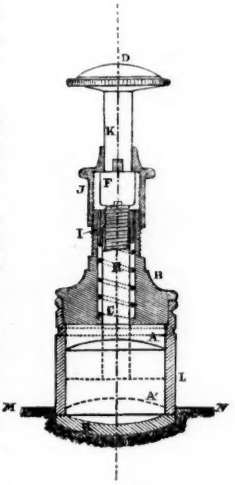
In the first half of the 16th century, Agricola mentions alum-works in Bohemia; near Saalfeld and Lobenstein, in Thuringia; also near Plauen and Luneburg. The utilization of the immense deposits of aluminous slate near Liege (Belgium) can be traced back to 1580.

By heating the alum, its acid had been separated already in early times. Paracelsus pointed out that, in contradistinction to the "vitriols," it contained "an earth," not a "metal." Hoffmann (1722) first declared this earth to be a peculiar kind, Marggraf (1754) proved it to be different from lime, and Klaproth (1789) found it to be soluble in caustic potassa.

In preparing alum, putrid urine was frequently made use of, so that ammonia-alum was doubtlessly not seldom obtained. Kunkel, in 1716, made the statement that alum contained volatile alkali (ammonia). Marggraf, in 1774, showed that the solution of alumina in sulphuric acid did not yield alum until after the addition of potassa, but it was not till 1797 that Chaptal and Vauquelin recognized the function of the alkali in the formation of alum, while the latter also discovered the fact that ammonia could enter into the composition of alum as well as potassa.—From FLUECKIGER'S *Pharmac. Chemie*, p. 844.

Digne's Dose-Compressor.

IN February we gave a description, with illustrations, of the apparatus for filling wafer-capsules constructed by Limousin (Limousin & Co.'s Cacheteurs). In using this and other similar contrivances, the substance is poured, in the state of powder, into the cavity of one wafer, and covered with the other. Bulky powders, particularly when administered in larger doses, necessarily require a rather large-sized wafer, which is sometimes a disadvantage. Mr. J. Digne has, therefore, introduced the improvement of reducing the bulk of the dose by a special apparatus, somewhat similar to that used in making compressed pills, which he calls "Compresso-Doseur," or Dose-compressor. It is constructed of nickeled bronze, of three different sizes, and consists mainly of two portions, which may readily be separated for the purpose of cleaning, namely: a cylindrical base, and a piston with its upper appendage. *A* is the piston, which is slightly hollowed out at its lower surface, to produce a button conformable to the shape of the wafer-capsule. This piston moves smoothly up and down in the cylinder *L*. The latter stands loose on a base which is also slightly concave, and when the piston is pressed down, the powder is forcibly compressed into a double convex button. The handle of the piston is common to all three sizes, which are imbedded in a common base, side by side, and it may be screwed on to any one of the compressors. When using it, the piston is removed, the cylinder held with the left hand over the concave base, the dose is poured in, and the piston replaced. Then with the palm of the right hand the piston is forcibly depressed, and the apparatus then separated into its two parts. The compressed button is removed, transferred to the wafer capsule and the latter closed in the usual manner.



If it is desired to produce rapidly a large number of compressed doses, the whole apparatus is lifted off its base, and placed on a perfectly level surface. A weighed quantity of a powder, representing *one* dose, having been introduced into the cylinder, the piston is screwed down by means of the regulating screw thread attached to the stem. As soon as the face of the piston touches the powder, the proper depression has been reached. The capacity of the space between the piston and the surface on which the instrument rests being thus ascertained, it may be rapidly filled, by holding it upside down, with the same quantity as often as required.—*Schweiz. Wochenschr. f. Pharm.*, No. 47.

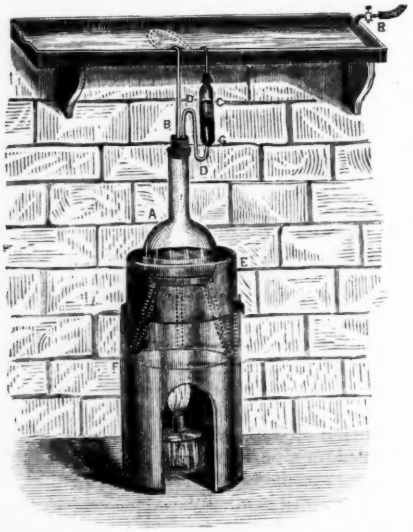
Assimilation of Cod-Liver Oil.

PHYSICIANS attached to the staff of the Episcopal Hospital in Philadelphia have recently been conducting a series of observations on the assimilation of cod-liver oil, and in cases where no marked effect has followed its use, the oil has been found in the fæces; on the other hand, cases in which the oil did not appear in the stools were such as gained flesh under its use.

* $Al_2 3SO_4 . K_2SO_4 . 2Al_2H_6O_6$.

Estimation of Nicotine in Tobacco.*

THE relative amount of nicotine contained in different kinds of tobacco furnishes one of the means to determine the special processes required to properly cure it, as well as the particular uses to which it is to be put. Liecke determined the amount of nicotine in the following manner: A weighed quantity of tobacco is treated three times in succession with water acidulated with sulphuric acid, the watery solutions are evaporated to the consistence of syrup, the liquid extract mixed, under stirring, with an equal volume of alcohol, and the mixture afterwards filtered. The filtrate now contains all the nicotine in the state of sulphate, which is left behind on evaporating the alcohol. The residuary salt is transferred to a flask or retort, potassa is added, and the nicotine is distilled over, by gradually heating the flask or retort in an oil-bath to up to 250° C. (= 482° F.). In the distillate the nicotine is determined by titration with standard sulphuric acid.



The French Government has a monopoly of the tobacco trade and manufacture in France, and a special process is used in the Goverment factories at Paris for determining the alkaloid. The apparatus employed (see Fig.) acts continuously and has the advantage of effecting a complete condensation. It consists of a flask *A*, imbedded in a sand-bath *E*, supported and partly surrounded by a sheet-iron cylinder F, the heat being supplied by gas or alcohol flame. The flask is closed with a doubly-perforated cork; through one of the perforations is passed the tube *B*, through the other the curved tube *D*, the ascending portion of which is dilated (*C*). On the wall over the apparatus, a trough *R* is fixed, through which a continuous supply of cold water passes, for the purpose of keeping the tube *B* constantly cold. The sample of tobacco to be examined is cut very fine and introduced into the oblong bulb *C*, a tampon of cotton *G* having previously been inserted to prevent any fragments of the tobacco from falling into the flask. The latter is charged with 100 cubic centimetres of ammoniacal ether, which is kept boiling until all the alkaloid is extracted from the tobacco. The vapors of the ether ascend through *B*, become condensed in that portion of the tube lying in the trough, and the condensed ether is by the pressure of the vapor forced into the bulb *c*, where it passes through the tobacco, and finally is driven more or less saturated back into the flask. The bend at *D* is, of course, neccessary to produce a liquid joint, for preventing the ether from passing through the tobacco as vapor. The residuary liquid is allowed to stand in the cold until the ammonia and ether have evaporated. Finally the nicotine which is left behind tolerably pure is determined by means of standard acid.

* After *Klencke, Lexicon der Verfälschungen*, etc., p. 629.

Elastic Adhesive Plaster.

W. P. MORGAN, M.D., writes to the *Boston Med. and Surg. Jour.*: I have been trying to find an elastic covering that, being attached to the skin, would yield to the movements of that membrane and the parts beneath it without causing an unbearable sensation of stiffness or an uncomfortable wrinkling.

As there was nothing in our market to suit me, I procured some india-rubber, and giving it a coat of plaster, such as is recommended in Griffiths' Formulary under the name of Boynton's adhesive plaster (lead plaster one pound, rosin six drachms), I found the material I wished. After using it as a simple covering for cases of psoriasis, intertrigo, etc., I extended its use to incised wounds, abscesses, etc., and found it invaluable.

Placing one end of a strip of the plaster upon one lip of the wound, and then stretching the rubber, and fastening the other end to the opposite lip of the wound, I had perfect apposition of the severed parts, the elastic rubber acting continually to draw and keep the parts together. When I have been unable to get the sheets of rubber, I have used the broad letter bands (sold by all stationers) by giving them a coat of the plaster.

Chloral Plaster.

M. YVON (*Bulletin de Thérapeutique*) has taken advantage of the fluidifying effect of camphor on chloral-hydrate to make a plaster, the formula for which is as follows: Chloral, 5 grams; camphor, 15 centigrams; gum tragacanth, 20 centigrams; glycerin, 2 or 3 drops;

starch 5 or 2½ grams. This, when applied to the dry skin, produces a blister in twelve hours; but, after the escape of the serum, a superficial eschar is formed. If the skin were slightly moistened before the application, a burning sensation was produced in a short time, and an eschar like that of a burn was formed. Yvon contends that chloral-hydrate may act as irritant, but that it is very uncertain and difficult to control. On the other hand, he recommends as a good local irritant a mixture of 15 grams (232 grains) of chloral, 50 centigrams (7½ grains) of camphor, one gram (15½ grains) of chloral-hydrate, and 2 or 3 drops of water.—*London Med. Record.*

Enemata of Chloral in Sick Headache.

Dr. J. Seure (*Bull. Gén. de Thérap.*, 1878, p. 365) recommends this treatment very highly. He says that a patient of his, a lady, who is subject to severe attacks of migraine after shopping, etc., is accustomed, on her return home, to take an enema consisting of a glass of warm water, with a tablespoonful of the following mixture: ℞ chloral, gr. xlv.; aq. destillat., f. ℥ x.—M. She then reclines upon a sofa, with closed eyes. Within a few *seconds* she begins to taste the chloral in her mouth, and at the same time she experiences a sensation of numbness. Little by little the headache disappears, nausea is allayed, and half an hour later nothing remains but a slight discomfort in the head, with a little torpor.

Within an hour and a half this lady finds herself able to sit down to dinner, and by the time the meal is over she has forgotten all about her headache and is able to entertain visitors during the evening. In this case twenty grains of the chloral are enough, but in the case of men thirty to forty grains are required. Dr. Seure has noticed that the relief gained is more prompt if a tablespoonful of brandy or whisky is added to the enema. The enema has one disadvantage; that is, the slight burning pain which it causes in the rectum. This may be avoided by the use of a glass of warm milk instead of water, or better by beating up the yolk of an egg in the water. In the case of individuals who retain enemata only with difficulty, a smaller amount may be injected, and a drop or two of laudanum may be added. Dr. Seure regards this treatment as almost infallible for the arrest of an attack of sick headache, and as decidedly preferable to the adminstration of remedies by the mouth. It has the advantage of not disturbing the stomach. Chloral also acts very promptly, its absorption by the rectum being almost instantaneous, as is proved by the effects on the general system, and also by the exhalation of chloroform by the lungs within a few seconds after the enema has been taken.—*Phila. Med. Times.*

Apparatus for the Administration of Anæsthetics.

Dr. Teuffel, of Stuttgart, describes as follows, in a recent German medical journal,* a new apparatus for inhaling chloroform and other anæsthetics:

It consists of an india-rubber mouth-piece, an U-shaped receptacle, hand-bellows, and connecting tubing. The mouth-piece, which has a thickened edge, is of the usual shape, intended to inclose the mouth and nose hermetically. In its upper portion it has an opening 14 millimetres (9/16 inch) wide, which is closed by a very sensitive valve of india-rubber opening outwards; and near its lower edge it has another opening of half the diameter of the former, likewise provided with a sensitive valve, opening inwards. The mouth-piece is connected with the U-shaped vessel by a

rubber tube 50 cm. (20 inches) long, and 1 cm. (⅜ inch) wide. The U-shaped receptacle is 20 cm. (7¾ inches) high, and one of its arms, as well as the lower bent, has a diameter of 5 cm. (2 inches), while the upper part of the second arm (see *cut*) is dilated in the shape of an inverted cone. Between the two arms of the receptacle a piece of cork is inserted, to make the apparatus less liable to be broken, and a wire hook is likewise attached to it for the purpose of suspending it at any convenient point near the patient. Both arms of the receptacle terminate in narrow curved tubes, for the attachment of the rubber connection. The air-bellows attached to one of the outlets are sufficiently intelligible without special description. When using the apparatus, a quantity of the anæsthetic, say for instance chloroform, is introduced into the receptacle, sufficient to fill the lower part of the U-shaped tube, as far as the shaded lines indicate, and a small pellet of loose cotton is inserted between the outlet from the

* *Medicinisches Correspondenzblatt des Würtembergischen ärztlichen Vereins*, 1878, No. 6.

dilated arm and the connecting tube. The object of this is to prevent any drops of the liquid to be mechanically thrown into the tube when air is blown through the apparatus. A quantity of 60 cubic centimetres (ab. 2 fl. ℥) of chloroform will be sufficient, and will be able to keep up narcosis for two to four hours. At first the mask is loosely placed upon the face of the patient, and a slow current of air driven through the apparatus which becomes saturated with the chloroform. The patient having gradually become accustomed to the anæsthetic, the mask is applied more closely and finally air-tight,* and the air now forced through the apparatus only during the act of inspiration, which is plainly marked by the working of the lower valve in the mask. During exhalation the current is interrupted. Dr. Teuffel states that under the use of this apparatus the stage of excitement is very rapidly passed, the narcosis rapid and complete, and unattended by the usual struggles or other inconveniences. The apparatus is sold at a very moderate price which is amply repaid by the great saving in chloroform. It may be obtained complete from P. Henger in Stuttgart.—*Illustr. Vierteljahrschr. d. ärztl. Polytechnik*, Jan., 1879.

Stop-Cock for Bottles.

ALTHOUGH the "champagne taps" in the market are theoretically very useful, it will be found in practice that some are much better than others, and that the best of them require more ingenuity in their management than many persons possess. We find in the *Scientific American* an illustration of one which, if *carefully* made, may answer very well. It will require, however, that the stopper be accurately ground to fit its cavity, and that the cork be capable of being replaced readily when it is worn out.

We will suggest, for the benefit of anybody who may undertake to make them, that if the cork can be replaced by india-rubber, and the shoulder above it by a screw nut, the latter can be made to compress the rubber and cause it to bulge out sidewise, and fit the neck of the bottle much tighter than any cork can be made to do. This principle is already in use in certain fruit-jars, and is probably patented.

Adulteration of Oil of Geranium.

THE volatile oils from various species of Andropogon, which yield the so-called citronella oil (from *Andropogon Nardus* L.), lemon grass oil or oil of verbena or Indian melissa oil (from *A. citratus* DC), and rusa oil or ginger grass oil or oil of geranium (from *A. Schoenanthus* L.) have long been used by perfumers and soap-makers all over the world. They were formerly imported from India, but the so-called geranium oil is now also produced in large quantities in Algiers. This oil has lately been found to be much adulterated with fatty oils as well as with other cheaper volatile oils, particularly oil of copaiva. Mr. Jaillard points out that genuine oil of geranium dissolves in alcohol of 70 per cent in all proportions, while the admixtures are not so soluble. The best way of testing consists in adding about 5 cc. (80 min.) of 70 per cent alcohol to 6 drops of the oil contained in a test-tube, and to agitate. If the oil was pure, a clear mixture must result.—*Jour. de Pharm. et de Chim.*

Coloring Matter for Vegetables.

M. GUILLEMARE has succeeded in fixing in a definitive manner the chlorophyll in vegetables by the following method. Spinach, treated with a weak solution of soda, yields nearly all the chlorophyll it contains, and it is this solution of chlorophyll that is added to the water used in boiling vegetables. The chlorophyll, set free, fixes itself on the vegetables, and, adding itself to the color already existing naturally in them, enables them to preserve their green tint, which, without this addition, would be destroyed by ebullition. The importance of this discovery cannot be overrated, as, by this new method, preserved vegetables may be obtained with the green color so much sought by *gourmets*, without the intervention of the salts of copper or other poisonous material.—*Br. Med. Jour.*

Benzoated Alcohol.

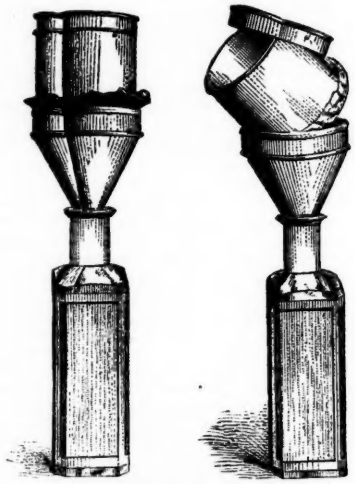
THIS is recommended by Dr. Templeton, in the *British Medical Journal*, for preparing a valuable and pleasant antiseptic solution. Dissolve half an ounce of benzoic acid, prepared from gum benzoïn, in a pint of alcohol. Mixed with water, it makes a pleasant, effective and innocuous lotion, gargle, or spray.

* Not safe to do this when chloroform is used.—ED.

The Use of Pilocarpine in Procuring Abortion.

DR. CHADZYNKI states that he has witnessed very favorable results by treating skin diseases, such as psoriasis, syphilis, etc., with hypodermic injections of pilocarpine. In one of these cases, the patient, a syphilitic girl aged 21, was in the fourth month of her pregnancy. After the ninth injection had been made, labor suddenly began, and the fœtus was born.

Three other similar cases have already been observed. It would, therefore, be highly instructive to submit this particular effect of the drug to careful study, as it may prove very useful in cases where premature confinement is indicated. Great care should, however, be observed in administering subcutaneous injections of pilocarpine to pregnant women.—*Allgem. Medicin. Central-Zeitung.*



A New Filtering Funnel.

A RECENT writer in the *Scientific American* describes a simple apparatus for filtering which may prove of use in many pharmaceutical operations, and may be thus described: An ordinary tin funnel has an upright band, about one inch wide, soldered to its upper edge. A tin can, of almost any capacity, without a bottom, and a trifle smaller than the top of the funnel, is also to be provided. Over the lower end of this can a piece of linen, muslin, or wire gauze is to be placed, and the end of the can, so covered, is then forced into the top of the funnel. Whatever is to be filtered may then be poured into the can, and by having the latter made high, a considerable pressure can be exerted on the layer of fluid next to the filter. The ease with which the apparatus can be cleaned and managed, and its inexpensive character, are noteworthy. By the use of a proper cover, the evaporation of the substance being filtered and the access of dust can be prevented.

On the Reddening of Carbolic Acid.

OWING to frequent complaints from purchasers and consumers of carbolic acid, about its acquiring a red color, the firm of *Gehe & Co.* (of Dresden) have published the following paragraph in their last trade-report:

Many prominent chemists, and all manufacturers of crystallized carbolic acid, have long endeavored to discover the cause of the reddening of pure crystallized white carbolic acid. But in spite of their careful investigations and experiments, the reason still remains unknown. It is inexplicable why, for instance, a portion of a distillate should remain perfectly white for months, while another portion of the same distillate turns red. Some chemists maintain that this reddening is a characteristic trait of perfectly pure carbolic acid; but this has not been proven. Whatever may be the cause, it is universally conceded that such colored carbolic acid, provided it has the correct boiling point, is precisely as good as the white, and need not be rejected. The Pharm. Germ. prescribes that it should melt between 25° and 30° C. (77°–86° F.); but it has generally a higher melting point [the U. S. Ph. gives the latter between 93° and 106° F.]. No manufacturer can warrant the permanency of the white color of his carbolic acid.

Detection of Nitrobenzole by a new Process.

GLADSTONE and others have observed that nitrobenzole under the galvanic action of copper and zinc, and in the presence of water, is converted into aniline. On this fact they base the following mode of discovering small quantities of nitrobenzole. A few clean scraps of zinc are placed in about 5 cc. of water, and about twelve drops of a concentrated solution of sulphate of copper is added. As soon as the liquid is thoroughly discolored, it is poured off, and the remaining metal well rinsed with water. Then a mixture of nitrobenzole and water is added, and heated for a few minutes to the boiling point. After filtering and cooling, a few drops of a solution of chloride of lime are added, when the reaction for aniline will be developed. In this way 0.05 per cent of nitrobenzole may be detected in a solution.—*Chemisches Centralblatt.*

Petroleum in Germany.—A flowing well has been struck near Heide, in Holstein (Germany), as the result of an experimental boring. The *D. A. Polytech. Ztg.* affirms that the product is in all respects equal to the American article.

The Color of Lard Oil.—The *Oil, Paint, and Drug Reporter* replies to one of its correspondents, who has occasionally met with lard oil having a bluish tinge like petroleum, as follows: This bluish tinge is not uncommon to pure lard oil, though it is not always observed. It often occurs that one entire pressing will have this "bloom," as it is technically termed, for a time, but exposure to air soon fades it and the oil assumes what is regarded as its natural color. It is not probable that lard oil is ever adulterated with petroleum.

RECENT PAPERS.

Solubility of Chloral Hydrate in Fats and Oils.—(A. CATILLON.) The author draws attention to the solubility of chloral hydrate in fixed oils and fats. At a slightly elevated temperature, fixed oils dissolve it in all proportions; on cooling, part of it separates in silky needles. In the cold, 3 parts of oil dissolved 2 parts of chloral hydrate. The author gives several formulæ, which will be found on page 125.

On the Reduction of Fehling's Solution by Milk Sugar.—(H. RODEWALD and B. TOLLENS.) The authors have reëxamined the proportions of cuprous oxide reduced from Fehling's solution under different conditions. They found that the amount of reduction varied in proportion, 1. to the time of heating; 2. to the greater or lesser dilution of the solutions; 3. to the amount of excess of Fehling's solution.

It was found that the most accurate results were obtained by heating the mixture on a sand-bath, and allowing it to boil for four minutes. The amount of total water present should be between three and four times that of the amount of test-solution used. In order to ascertain this, it is best to make an approximate preliminary test. The authors state that, so far as their investigations have progressed, they find, that 1 molecule (or 360 grams) of milk sugar reduce 7.47 atoms (or 471.896 grams) of copper.—*Ber. d. Deutsch. Chem. Ges.*, 1878, 2076.

Hydrobromic Ether as an Anæsthetic.—DR. L. TURNBULL has made experiments with this new anæsthetic. He found that in its action upon man "it differs from ordinary ether in the stage of excitement being short, the sedation and subsequent elimination rapid." In ten cases, the shortest time required to bring the patient under its influence was thirty seconds, the longest time being only four minutes. The patients were not kept long enough under anæsthesia for us to form much of an idea as to its safety, the average time under its influence in these cases being only two minutes. But from the fact that notwithstanding the brevity of the anæsthesia, vomiting occurred in three of the cases, it is not likely that it will supersede sulphuric ether in general practice. —*Trans. of Penns. State Med. Soc.* in *Ohio Med. and Surg. Rep.*

New Process for Carbonating Liquids.—An improvement made in this process has appeared in Holland. The usual method is to have sulphuric acid react on some carbonate of lime, as chalk or powdered marble. Even after the process of washing there is great probability of sulphuric acid and other injurious matters remaining. The new invention is that of a gentleman of Groningen, the carbonic acid being produced by heating bicarbonate of soda in a vertical cylinder, without the aid of carbonate of lime and sulphuric acid. The gas, after having been cooled in a horizontal tube, is brought into a vertical cylinder, and from there to another cylinder, which leads to an impregnator, and this without the use of a pump. Above the impregnator are placed bottles of the water or other liquid which are to be impregnated with the carbonic acid. This system does away with the gasometer, pump, motors for condensation, washing, etc. The advantages of this system are economy, rapidity, cleanliness, and hygiene.—*Wine and Fruit Reporter.*

Zinc Oxide in Diarrhœa.—DR. JACQUIER has tested the good effects of the employment of oxide of zinc in diarrhœa. He administers every six hours a powder consisting of

Oxide of zinc.....14 gr.
Sodium bicarbonate..... ... 2 gr.

In some cases the malady had existed from one to many months, and other methods of treatment had not produced any improvement. In all the cases which were treated in this manner by a colleague of his, there was only one in which three doses of the remedy were required.—*Brit. Med. Journ.*

Monobromated Camphor as a Hypnotic.—FRANKHAUSER recommends monobromated camphor as a hypnotic in cases in which the narcotics proper are not borne, or in which they have lost their efficacy from long use. The doses required to produce sleep (he gives generally 2 to 2½ grains in powder) are entirely harmless; unpleasant effects—such as a feeling of fulness in the head, nausea, excitement—occur but rarely, and even then are only transitory. In most cases the drug is well borne, even though gastric catarrh, cardialgia, etc., exist. The hypnotic effect follows rapidly, as a rule; and in many cases, even when the drug has been used repeatedly, lasts for a considerable time. In other cases it passes off in a relatively short period. In some cases these small doses refused to produce sleep, but it is probable that larger doses would have been more successful. Three and three-quarter grains, and even more, have been given without injury.—*Deutsche Medicin. Woch.*

A New Remedy for Dysentery.—According to the *Indian Medical Gazette* of October 1st, a new and very efficacious remedy for dysentery has been found, which, if somewhat inferior to ipecacuanha, possesses the advantage over it of being free from nauseating effect. It is the root of a plant called Rungun in Bengalee, and found to belong to the genus *Ixora* of the natural order Cinchonaceæ. The species that have been tried are the *I. Bandhuca* and *I. Coccinea* (Roxb.).* The plant is a very common one, and is most efficacious when employed in its fresh state. An extended trial of its efficacy has been directed by the surgeon-general.

Examination of Enameled Ware.—(R. C. KEDZIE.) In the recent (6th) report of the Michigan State Board of Health, the above writer states that he has examined several samples of enameled ware used for culinary purposes, to ascertain the presence of poisonous materials in the enamel, and reports as follows: "The specimens of 'granite ware' which I have examined have failed to reveal any poisonous or injurious substance. I removed a quantity of the enamel and ground it to a fine powder, and then treated it with strong mineral acids, but without detecting any injurious substance. I regard the 'granite ware' as a safe material to use; the only point upon which I fear it will fail is its power to resist the tendency to crack after it has been frequently heated; but I have not made sufficient trial to pronounce on this point.

"With the 'marbleized iron ware' I found very different results, as I found the enamel to contain a large amount of lead, and I was even able to obtain traces of arsenic from the enamel by the use of Marsh's apparatus. In a quart basin of this 'marbleized iron ware,' I placed eight ounces of water, containing five per cent of nitric acid, heated it boiling hot, and kept the whole in a warm place for twenty-four hours, when I evaporated the dilute acid to dryness, dissolved the residue in water, filtered, and from the filtrate precipitated the lead. I obtained in this way what was equivalent to 23 grains of lead. In a similar basin of 'marbleized iron ware,' I placed eight ounces of vinegar (free from lead), and kept it in a warm place for twenty-four hours; I then evaporated it to dryness, dissolved the residue in water, filtered, and precipitated the lead in the filtrate, when I obtained what was equivalent to seven grains of lead. On powdering some of the enamel, and treating this with concentrated acids, I was able to obtain from this acid solution of the enamel very distinct traces of arsenic. I suppose that the arsenic present was not so designedly, but accidentally, from being contained in some of the substances used in making the enamel. But a culinary vessel which contains so much lead, and in such state of feeble combination that

**Ixora Bandhuca* Roxb. is a very elegant bushy shrub growing in all parts of Hindustan. It has been already used by the older Hindu physicians, but not for dysentery. Its flowers are very handsome, scarlet first, afterwards crimson. It is a favorite simile for Hindu poets, and is frequently mentioned in Sanskrit literature. Some have, however, interpreted the Sanskr. *bandhûka* or *bandhujîva* with *Pentapetes Phœnicea* L.

Ixora coccinea Roxb. is also very handsome, and has been found by Roxburgh in a wild state in Tanjore and in China.—ED. N. R.

eight ounces of ordinary cider vinegar can, in twenty-four hours, dissolve from a quart basin what is equivalent to seven grains of metallic lead, must be a very unsafe vessel for general use. I regard it as entirely unsafe and utterly unfit for domestic use."

Tomatoes not a Cause of Cancer.—(H. O. HITCHCOCK.) This writer has endeavored to learn what the origin is of a popular belief that the use of tomatoes may cause cancer. He had solicited information on this point, and received replies from a number of sources; among them one from Dr. Hal C. Wyman, of Blissville, who furnished the following answer:

"Early in my professional studies, I remember having heard that tomatoes as diet caused cancer. This information came to me from an eclectic physician. On asking for further information, I was referred to the *Eclectic Medical Journal* of Pennsylvania, for September and October, 1871, then the organ of the institution, which some years since had its charter repealed for selling diplomas. There I found the article here quoted:

"'TOMATO.—BY PROF. J. D. HYLTON, M.D.

"In my chemical researches in the vegetable kingdom, I am daily discovering new agents. In the tomato, I can isolate a pure alkaloid, which possesses cholagogue properties superior to podophyllin, leptandria, euonymous, mild and efficient in its action. But in my microscopical researches with this same agent, I have discovered *cells identical with cancer cells, the appearance of the two, the true cancer cell and those found in the tomato, being under the microscope the same.*

"'If this fact is true, and can be substantiated by other chemists, it may in some manner account for the fearful increase of cancer in sections of the country where this fruit is cultivated.'"

Of this quoted article, Dr. Wyman remarks:

"This is all that I know in regard to the matter, and I never heard of tomatoes being a probable cause of cancer prior to the publication of this article. I have taken pains to look up the writings of the chemist, Prof. J. D. Hylton, M.D., and I find him to be the author of a series of articles in the afore-mentioned journal, which the merest tyro in medicine can readily see are compiled merely after a method of advertising, regardless of any attempt at scientific accuracy."—*Report of Michigan State Board of Health.*

Suppository-Moulds.—(BERNBECK.) The author disclaims the reputed advantages of metallic over wooden moulds for making suppositories. The latter kind have only this drawback, that the suppository-mass is apt to adhere to the wood, and break on removal. This may, however, be always prevented by coating the inside with glycerin.—*Pharm. Zeit.*, 1879, No. 4.

Aconite-Poisoning.—Seven men lost their lives lately by drinking a liquor which one of them had prepared from roots growing in his garden. He had been in the habit of cultivating rhubarb, the roots of which he dug up in the fall and winter, and macerated them in cognac. But, owing to the absence of leaves above ground, he mistook some aconite roots, which likewise grew there, for the others. Three of the persons died within a very short time, and before assistance could be rendered; the others shortly afterwards.—*Pharm. Zeit.*, 1879, 4.

Coffee Hypodermically in Opium-Poisoning.—DR. M. A. PALLEN, N. Y., reports several cases of opium poisoning and morphia vomiting, which were treated chiefly by fluid extract of Java coffee, administered hypodermically in quantities of 15, 20, and 30 minims at a time. Recovery was quite rapid. It was observed that, if the injection was previously *warmed*, no abscesses were produced by it, but that a cold injection was followed by inflammation or abscess.—*Med. Rec.*

Crude Petroleum as an Internal Remedy in Bronchial Affections.—(DR. BLACHE.) Some time ago a refiner of petroleum in France was cited before the police to answer complaints made against him, of having dispensed, without authority, crude petroleum as a remedy. He was compelled to give up this practice, but the investigation developed the following facts:

In his works, where a large number of workmen were employed, certain diseases, particularly phthisis and bronchial catarrh, never made their appearance. New workmen, who entered the works in a delicate and feeble condition, soon became strong and vigorous. Others stated that, on leaving the works for a few hours, thoracic pains were felt by them, which disappeared again on entering the works. The same observations are said to have been made in the oil regions of North America. The author, while investigating this subject, was surprised to find that crude petroleum is comparatively innocuous. In some Marseilles works a workman once accidentally drank about 200 grams of it, and the only effects observed were nausea without vomiting, and diarrhœa lasting 24 hours.

Mr. Gardy, pharmacist at Paris, prepared for the author capsules containing 0.25 gm. (4 grains) of crude petroleum. These capsules were baptized by the somewhat more euphonious name "Capsules d'huile de Gabian," or "Capsules of the Oil of Gabian," the latter name originating from the fact that one of the most ancient sources of petroleum or rock-oil in France is situated at Gabian, in the Department of Hérault.

Refined petroleum will not answer for this purpose; only the crude substance, as it comes from the wells, appears to have the above-mentioned remedial powers. The author has experimented with it, and has found it to be of great value in diminishing the expectorations and allaying the cough in chronic bronchitis; in asthma it has also proved beneficial. In simple bronchitis it produes a rapid improvement, and recovery takes place without the patient passing through the second period. The effect upon consumptives has not yet been sufficiently studied.

Magnesium Benzoate.—(PROF. KLEBS.) Sodium benzoate has often been observed to have a retarding effect on the heart's action, and appears, therefore, to be of doubtful benefit as an internal remedy (in calcular diathesis, etc.). Benzoate of magnesium does not produce this effect, and deserves, therefore, the preference. It is not very soluble in water, requiring 33 parts, and is, therefore, best given in powder.—*Pharm. Zeit.*, 1879, No. 10.

Strychnine Poisoning.—The *Revista Medico-Quirúrgica*, of Buenos Ayres, for May 8th, records the case of a young man, aged 19, who voluntarily swallowed two grams of crystallized strychnine at midnight after a full meal. He was not discovered till five next morning, when he was suffering from tetanic convulsions, with symptoms of asphyxia. A pint of olive-oil was administered through an interval between the teeth, whilst an enema of 500 grams of brandy in a like quantity of water was administered, together with 2 grams of laudanum, the anus being at the same time plugged to secure the retention of the fluid. At half-past five the following solution was introduced into the stomach: Potassium iodide, 4 grams; iodine, 1 gram; dissolved after trituration in 1 litre of water. The tonic convulsions lasted about half an hour, succeeding to a complete calm, in a body entirely rigid. The pulse was thready, respiration short and frequent, and a cyanotic tint covered the integuments, particularly of the face and neck. Stimulant frictions were made over the whole thorax for half an hour, and were succeeded by an easing of the breath. The patient was completely restored four days after the ingestion of the poison. The antagonistic properties of the laudanum and brandy appear in this case to have been of the greatest value, whilst the antidotal value of the iodinic solution was of secondary, if not equivocal importance.—*The Practitioner.*

Salicylic Acid as a Prophylactic against Scarlatina.—P. C. BAKER, M.D., gives adults and large children 5 gr. compressed pills or capsules once or twice daily, depending on the period of incubation and known exposure. If seen soon, a daily dose suffices. To infants and

small children, he gives 1 to 3 grains dissolved and suspended in equal parts of hot glycerin and boiling water, repeating the dose twice daily for several days, and then giving one daily dose until danger of contagion has been passed.—*N. Y. Med. Journ.*, Feb.

Quinia Rash.—Dr. Farquharson reports a case in which ten grains of quinia given thrice daily was followed on the fourth day with a rubeoloid rash over the entire body, composed of flat, slightly raised patches of a rose-pink and accompanied with much tingling. No other symptom of cinchonism was produced, and on discontinuing the medicine the rash subsided. In a discussion of this report which took place at the Clinical Society of London, it was remarked that these symptoms are in the nature of urticaria, and that it *might*, in some instances, be due to derangement of digestion. Dr. Nunn, of Georgia, mentioned a case in which the administration of quinia always caused an erythematous eruption, limited to a few spots on the body, with considerable itching and sometimes pain, and followed by desquamation. Whenever the patient is affected with malarial fever, the appearance of this rash is followed by an improvement in the fever.—*The Lancet*, Amer. Edition, Feb. 7th.

Effect of Potassium Bicarbonate on the Acidity of Urine.—(Dr. C. R. Ralfe.) In order to verify the observations of Drs. Bence-Jones and W. F. Beneke and Prof. Parkes regarding the influence of alkalies in increasing the acidity of urine, Dr. Ralfe has made a series of experiments which are published in the American edition of *The Lancet* for February.

The results show that administration of an alkaline bicarbonate, when the stomach is empty, increases the acidity of the system, while its administration after a meal diminishes it. He offers a theory to account for this and notes the following therapeutic indications: 1. In cases of acid dyspepsia arising from the excessive formation of acid within the system, as in lithæmia, the alkaline bicarbonates should not be administered before food, but after. 2. The administration of alkaline carbonates before meals is indicated in cases where free acid is formed in the stomach—the result of fermentative changes, and when this interferes with the proper digestion of food.

Michel's Paste.—This paste consists of strong sulphuric acid and finely powered asbestos—three parts by weight of the former to one of the latter, thoroughly rubbed together. It is applied in the same way as the Vienna paste, the thickness of the layer depending upon the amount of tissue it is desired to destroy, varying say from one-eighth to four-eighths of an inch in depth. It is spread upon the diseased surface with a small wooden spatula, or with the blade of a knife. It dries at the end of a few hours, the time varying with the depth of the layer and the amount of blood which oozes during its application. When used on a large surface, it gives rise to considerable and prolonged suffering, so much indeed that the patient should have some anæsthetic. The paste should always be freshly made. For fear it should run upon the surrounding healthy parts, it is well to encircle the portion to be destroyed either with a good layer of tallow, or collodion, or adhesive plaster. The patient must endure the pain which succeeds upon his recovery from anæsthesia as best he may, unless it be so severe as to call for an opiate. —D. W. Yandell, in *Louisville Med. News.*

Effect of Rhubarb in Preventing Nausea from Morphia.—Dr. R. H. Tatum, of Dayton, Va., believes that when a few grains of *powdered* rhubarb are given with morphia it will not only prevent nausea through the tonic effect of its action on the gastric mucous membrane, but will also improve the appetite, even when given nightly for a long period of time. On the omission of the rhubarb he has observed that the unpleasant effects of the morphia become manifest.—*Virginia Med. Monthly.*

Immunity from Cholera of Workers in Copper.—At recent meeting of the Congress of Hygiene, M. Burcq read a paper on this subject based on an experience of twenty-five years. He had made careful inquiries and had found that workmen in copper uniformly preserved their health during cholera epidemics.

[We have talked with copper and bronze workers on this subject, and find that a knowledge of this fact has long been in the possession of their craft, but that, unlike M. Burcq, they do not attribute it so much to the influence of the metal as to the use of sulphuric acid in "pickling" copper, brass, and bronze work—a process resorted to for the purpose of removing the oxide and other substances on the surface of castings, and sheets of copper in the process of finishing it. It is well known that the mineral acids are of value as a prophylactic in this malady, and this explanation appears to us more reasonable than the one which presumes that it is the absorption of minute portions of copper which renders persons insusceptible.—Ed. N. R.]

Preparations of Quinia for Hypodermic Use.—*Kinate of Quinia* is proposed by Mr. Collier for hypodermic use, owing to its solubility in three or four parts of water. He prepares a basic kinate from the calcic kinate, and adds to it, in solution, the quinia sulphate in powder, producing the amorphous kinate by evaporation. This is subsequently readily prepared for use, and possesses the qualities of solubility and neutrality.

Mr. Yvon recommends *lactate of* quinia for the same purpose, and the sulphovinate of quinia is also mentioned as being an eligible form.

Copaivic Acid.—Géza Lucich, apothecary and professor at Presburg, prepares a copaivate of sodium from copaivic acid. The acid occurs in prismatic crystals which soon lose transparency when exposed to air. Lucich has made pills of copaivate of sodium by mixing 2 parts of the product with 1 part of dextrine, and making a mass with mucilage. Each of these pills contains 2 grams (30 grains) of copaivate of sodium—equivalent to 6 grams of copaiba resin.—*Med. Times*, Feb. 15th, 1879, from *Allg. Med. Centr. Zeitg.*

New Preparations of Quinia.—Rosenthal recommends *arseniate of quinia* in intermittent and puerperal fevers in doses of .01 to .02 gram (⅙ to ⅓ gr.) twice or thrice daily in pill form. In typical facial neuralgia of limited extent, he has seen rapid relief follow, in two cases, the use of increasing doses.

Salicylate of quinia is a white powder with a rather bitter taste, easily soluble in ether, but only slightly so in water (1 to 225). In several cases of erysipelas and typhoid fever, Rosenthal gave it in doses of .5 grams (7½ grains) and more daily, with the result of materially reducing the fever and quieting the patient. Recommended also in puerperal fever and the severe cases of necrotic diphtheria with typhoid symptoms.—*Medical Times*, Feb. 15th, from *Wien. Med. Press.*

To Arrest Pain caused by Applying Sulphate of Copper to the Conjunctiva.—Carl Pich has found that four or five minutes after the crystal of sulphate of copper has been applied to the conjunctiva, powdered calomel blown against the spot will arrest the pain at once and completely. Whether this is the result of chemical or mechanical action Dr. Pich is unable to say.—*Med. Times*, Feb. 15th, 1879.

Nitrate of Pilocarpine as a Remedy in Pleuro-pneumonia.—In a case of pneumonia with pleurisy in a man of 55, Dr. T. H. Newland, of St. Louis, gave ⅜ gr. of nitrate of pilocarpine twice daily for three successive days, giving it hypodermically.

Its sialagogue effect came on in about 25 minutes, and diaphoresis about 10 minutes later, the patient being each time greatly relieved as regards pain, sleep, ability to lie down, and ease of respiration. Poultices to the chest were also employed.—*St. Louis Med. and Surg. Journ.*

Viburnum Prunifolium in Abortion and Menorrhagia.—Dr. D. B. Nisbet, of Georgia, gave drachm doses of the tincture of *Viburnum prunifolium* to a preg-

nant woman who had suffered from an injury of the abdomen and was threatened with premature delivery. This with rest put an end to uterine contractions and gestation was not interrupted. In another case of excessive menstrual flow, the use of the remedy, commencing two days before the discharge, rendered the flow normal in character.

Lime-water as a Remedy in Ivy-Poisoning.—T. C. OSBORN, M.D., writes to the *Amer. Med. Bi-weekly* his experience in a case of ivy-poisoning in the person of a tanner's daughter. The father applied to the inflamed surface a roller bandage wet with *oak-ooze* from one of his tanning vats and accomplished a rapid cure. [This is but another method of making strongly alkaline and astringent applications and bears out the directions commonly given in treating this malady.]

New Anæsthetics.—(J. T. CLOVER.) The writer tried *ethylidene dichloride* a few years ago, but found, after using it, that it was not sufficiently better than chloroform to counterbalance the objections to it. He found that it produced nausea, and the fact that it caused less depression of the heart's action than chloroform was not particularly noticeable, and it is, moreover, true of the latter that, when employed in diluted doses, this objection does not hold good. He has recently tried it again, owing to the favorable report given by the Glasgow Committee but finds that the statement made by the Committee, that "practically a dog will live for a lengthened period in a state of complete anæsthesia under the influence of ethidene dichloride, while it will die in a short time when chloroform is used" is a conclusion which is hardly justified, and he attributes the difference in the results to the relative strength of the vapors used.—*Brit. Med. Jour.*

New Mode of Preparing Solution of Perchloride of Iron.—MR. E. B. SHUTTLEWORTH communicates the following improved method of preparing ferric-chloride solution, which will no doubt be appreciated by many who have had trouble in making it:

"It consists in reversing the ordinary operation, adding the iron solution to the nitric acid instead of the acid to the iron. If the specified quantity of nitric acid be placed in a dish or pan, and the iron solution, mixed with the proper quantity of hydrochloric acid, be allowed to trickle slowly into it, the oxidizement is instantaneous in the cold, and the frothing very slight. The change from blackish-green to reddish-brown is very marked, and any deficiency in the quantity of nitric acid can be at once seen. On the large scale the liquor may be best added with a siphon. With a bent glass tube of five-sixteenths of an inch in diameter, the liquor from ten pounds of iron may be run in safely in twenty-two minutes, and requires no attention whatever, save in getting the siphon in operation. With pharmacopœial quantities of material the process of oxidizement may be concluded in almost as many seconds.

"The final concentration may be performed in a water-bath, and in this case earthenware vessels may be used, but of course the evaporation is much more rapid with the naked flame or a sand-bath; but a high degree of heat is not at all necessary in making this preparation."

Mr. Shuttleworth thinks that the plan of reversing the order of mixing may be advantageous in many similar preparations, and invited others to state their experience. —*The Canad. Pharmac. Journ.*, Feb.

The Dry Suture.—DR. JOHN H. PACKARD recommends this in closing long wounds. He used strips of Seabury & Johnson's porous paster two and a half inches wide and the length of the wound. These are applied on each side of the incision, and then the sides laced together, using the holes in the porous plaster.—*Phil. Med. Times.*

Phosphorescent Paper, on which writing can be read in the dark, is one of the latest novelties in paper making.

BIBLIOGRAPHY.

PHARMACEUTISCHE CHEMIE. Von F. A. FLUECKIGER. Berlin, 1879. Rudolph Gaertner. 8vo, pp. iv., 910. (Pharmaceutical Chemistry, by F. A. Flückiger.)

THIS work, which had been announced some time ago, has now appeared and lies before us. In contradistinction to most other works treating on this subject, the author has chosen a more practical than theoretical division of the subject.

The contents are arranged in the following succession: 1. *Non-metallic Elements:* chlorine, bromine, iodine, sulphur, phosphorus. 2. *Metals:* silver, gold, mercury, bismuth, iron. 3. *Binary Compounds* of non-metallic elements, exclusive of Acids and Hydrocarbons: water, iodide of sulphur, and carbon disulphide. 4. *Cyanogen-group:* bitter almond water, cherry-laurel water, ferrocyanide of potassium, oil of mustard, oil of horseradish, etc. 5. *Hydrocarbons* derived from Methane: petroleum, etc., paraffin. 6. *Alcohol-group:* alcohol, ether, etc., chloroform, glycerin, etc. 7. *Non-aromatic organic Acids:* formic, acetic, valerianic, succinic, etc., acids. 8. *Fat, Soap,* and *Wax.* 9. *Carbohydrates:* grape sugar, lævulose, honey, cane sugar, etc. 10. *Resins:* of jalap, scammony, gutta-percha, turpentine, etc. 11. *Benzole-group:* benzole, phenol, creasote, benzoic, salicylic, tannic acids. 12. *Ethereal Oils,* 13. *Alkaloids.* 14. *Inorganic Bases and Peroxides:* ammonia, soda, potassa, lime, magnesia, etc. 15. *Inorganic Acids and Anhydrides.* 16–33: *Salts* of ammonium, lithium, sodium, potassium, calcium, barium, magnesium, zinc, cadmium, copper, silver, gold, mercury, lead, bismuth, antimony, aluminium, iron.

Prof. Flückiger has had the great advantage of having received a better insight into the practical workings of large manufacturing establishments than probably any other author of a similar work. This fact may be recognized particularly by reading the author's descriptions of manufacturing processes, both of the heavy crude and of the finer chemicals. Almost on every page we find original contributions of the author interspersed with the text. We shall frequently have occasion to refer to its pages and quote therefrom.

A very useful and interesting feature of the work are the historical notes which are appended to each article. We select, as an example, the note appended to alum, which we have translated on page 110 of this number.

An appendix contains an alphabetical biographical index of pharmacists, chemists, physicians, etc., which are mentioned in the work.

The author originally intended to adapt his work to the German Pharmacopœia, but, as he himself informs us in a late letter, he soon found it impossible to confine himself within the originally mapped-out boundaries. He desired to produce a work which should serve as a basis for his lectures on pharmaceutical chemistry, in which he has to teach facts not usually taught or sufficiently dwelt upon by lecturers on theoretical chemistry.

The book is just as well adapted to American or English pharmacy as to the German. While there are, of course, a small number of substances peculiar to this country, which are not treated in the book, it nevertheless gives the most necessary, concise, and latest information on all chemical substances used in pharmacy which we are acquainted with.

It may be obtained from Mr. E. Steiger, publisher and bookseller, 25 Park place, New York. Price $7.40.

SIXTH ANNUAL REPORT OF THE SECRETARY OF THE STATE BOARD OF HEALTH OF MICHIGAN for the Fiscal Year ending September 30th, 1878. 8vo, pp. 355.

DR. HENRY B. BAKER, the Secretary of the Board, has just issued another of this valuable series of reports, in which we notice the following papers of special interest: Lead-Poisoning from Use of Tinned, Glazed, and Enameled Ware—KEDZIE; Cancer not Caused by Use of Tomatoes—HITCHCOCK; Wood-Pavements and Wood-

Sidewalks: Influence on Public Health—HITCHCOCK; The Opium Habit in Michigan—MARSHALL; Preservation of the Teeth—FARNSWORTH; Lectures on Public Health at the University of Michigan—LYSTER; Climate and Topography of the Lower Peninsula of Michigan—LYSTER [profusely illustrated with maps, relief sections, and diagrams]; Principal Meteorological Conditions in Michigan in 1877—BAKER; etc.

DIPHTHERIA: ITS NATURE AND TREATMENT, VARIETIES AND LOCAL EXPRESSIONS. By MORELL MACKENZIE, M.D., London, etc. Philadelphia: Lindsay & Blakiston, 1879. 7½x5 inches, pp. 104.

THE writer is well known as an authority on throat affections, and it is not, therefore, strange that the study of a constitutional disease, which presents ordinarily such severe throat symptoms, should interest him. The most notable difference between the views of the writer and those of many other authorities is his belief of the unity of diphtheria and croup, the latter being called by him laryngo-tracheal diphtheria.

It may fairly be said that Dr. Mackenzie has included in this little work pretty much all that is practically of value to the practitioner regarding the subject, and has given such a multitude of references to authorities that the reader can easily extend his knowledge of special views or observations at his pleasure.

RIMMEL'S ALMANAC FOR 1879.

TWO elegant varieties of the calendars issued by this establishment have come to hand, viz.: "The Old Masters" containing chromo-lithographic portraits of Dürer, Raphael (Sanzio), Reubens, N. Poussain, Murillo, and Reynolds; the other a comic affair entitled "Hearts and Diamonds," in the form of a folded strip with tuck, and likewise illustrated chromo-lithographically. Those who know the ingenuity and taste displayed by this establishment in its valentines, bon-bons, perfumes, and toilet articles can appreciate that these examples quite sustain its reputation.

TRANSACTIONS OF THE THIRTY-THIRD ANNUAL MEETING OF THE OHIO STATE MEDICAL SOCIETY. Held at Columbus, May 14th, 15th, and 16th, 1878. 8vo, pp. 228. Published by the Society.

THOUGH not a bulky report, this is a very creditable one, and contains some very good papers, among which we will mention the following: "The Use of Sub-Sulphate of Iron as a Local Remedy," by C. S. Muscroft, M.D., erysipelas being the affection on which the writer lays greatest stress; "Quinine as an Antiseptic," by G. S. Franklin, M.D.; and "Quinine a Prophylactic in Scarlet Fever," by Colon H. Reed, M.D.

DIFFERENTIAL DIAGNOSIS: A Manual of Comparative Semeiology of the more Important Diseases. By F. DE HAVILLAND HALL, M.D., etc. American Edition, with Extensive Additions. Philadelphia: D. G. Brinton, 1879. 6x8¼ inches, pp. 205.

THE text relates to fevers, diseases of the blood, and diseases of the nervous, respiratory, circulatory, digestive, and urinary systems. Whenever it can be used with advantage, a tabular arrangement is employed, which is without doubt the best arrangement of matter for a work of this kind. The book has grown out of the need which existed for it, and in its present form represents considerable experience. In reproducing it in this country, due attention has been paid to the influence of climate upon the manifestations of certain diseases.

The number of works issued by this publisher has heretofore been so small that the appearance of one in which such exceptionally good taste is shown is worthy of notice.

A PRACTICAL MANUAL OF THE DISEASES OF CHILDREN, with a Formulary. By EDWARD ELLIS, M.D., etc. Third Edition. New York: William Wood & Co., 1879. 8vo, pp. 213.

THIS is the second volume of "Wood's Library of Standard Medical Authors," and has the very exceptional fact in its favor, that the author has not consumed his space and the time of his readers with the discussion of how to detect the existence of diseases, and then left them practically to their other resources for information as to how to treat them, but throughout, the effort has apparently been made to give the latter as full consideration as the limits of the work would permit. There can be no question that the book is well worth one-twelfth the cost of the annual subscription.

THE NATIONAL DISPENSATORY: Containing the Natural History, Chemistry, Pharmacy, Actions and Uses of Medicines, including those recognized in the Pharmacopœias of the United States and Great Britain. By ALFRED STILLÉ, M.D., LL.D., Professor of the Theory and Practice of Medicine, and of Clinical Medicine in the University of Pennsylvania, and JOHN M. MAISCH, PH.D., Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy, etc. With 101 illustrations. Philadelphia: Henry C. Lea, 1879, 8vo, pp. viii., 1628.

THE pharmaceutical world has for a long time been on the *qui vive*, in expectation of the forthcoming Dispensatory by Professors Stillé and Maisch, who have acquired such a reputation in their respective departments that nothing but a satisfactory work could be expected. This expectation has been quite realized, and at the present writing a large number of our readers are no doubt in possession of the volume.

We have examined the work with some care, as we desired to make a mental comparison between it and some other works of reference, and are very much pleased that we can pronounce it to be reliable, comprehensive, and including the latest researches accessible to the authors. This is more particularly true as regards the portion devoted to pharmaceutical subjects.

A work of such a magnitude, containing such a variety of substances, and incidentally treating of an almost countless number of products and preparations, can scarcely be expected to be entirely free from errors or omissions. The wonder is that we have noticed so few which we shall point out hereafter.

The arrangement of the articles is strictly alphabetical, a great improvement over some other similar works, which immensely facilitates reference, and often makes the use of the index superfluous. Each article is subdivided into a series of headings, giving respectively the origin (and varieties), preparation or description, properties or characters, composition, allied substances, impurities, constituents, pharmaceutical uses, physiological action, and medical action of the substance treated of, often also the commerce, tests, substitutions, administration, etc. The text, which occupies 1521 closely but clearly printed pages, is followed by a Table of maximum doses, taken from the German Pharm.; Tables of weights and measures; Rules for conyerting apothecaries' weights and measures into gram weights; Prof. Oldberg's rules and tables for the same purpose; Tables of comparison between various hydrometers; Thermometric tables; Table of elements; List of Reagents; General Index; and finally—a novel feature in a dispensatory, and perhaps much open to argument—an Index of Therapeutics.

The subjects treated of in the body of the work embrace all crude substances and preparations officinal in the U. S. or Brit. Pharm., also some others, officinal in the French and Ger. Pharm., together with a large number of substances not officinal, but more or less frequently employed in medicine, or deserving a place in the future pharmacopœia.

We shall here give a partial list of the unofficinal substances with occasional remarks:

Acetonum.—Acidum Aceticum (the present successful manufacture of pure acetic acid from wood-vinegar should have been mentioned).—Acidum Carbonicum.—Ac. Catharticum.—Ac. Chrysophanicum (the medical uses appear not to be completely stated).—Acidum Formicicum (we fail to see why the shorter term *formicum* should not have been preferred. Although originally derived from *formica*, the ant, we call the salts prepared from it, not formicates, but formiates or formates).—Ac. Hydriodicum,

Hydrobromicum (the danger in using Markoe's process should have been pointed out).—Ac. Lacticum (the spec. grav. of the pure acid is at least 1.22 and has been given as high as 1.245).—Ac. Picricum (no dose given. This is the case in many instances, particularly in substances which are less frequently used; but since a dispensatory is precisely the work in which the doses and strengths of preparations (even not officinal) are looked for, these should be given as completely as possible, even if the authors do not believe in their efficacy. They may, of course, state their opinions as to the latter).—Ac. Salicylicum.—Ac. Succinicum.—Actæa spicata (Baneberry root).—Adansonia digitata (Baobab).—Adiantum (Maidenhair).—Æther aceticus, formicicus (better: *formicus*), hydriodicus, hydrobromicus, methylicus.—Æthyleni bichloridum.—Agaricus albus (White Agaric).—Agave (American aloe).—Agrimonia.—Ailanthus.—Akazga.—Albumen Ovi.—Alcohol methylicum.—Aldehyd (in English we prefer the spelling *aldehyde* as more consonant with the habitus of the language).—Aletris (Colic root).—Alisma (Water Plantain).—Alkanna (alkanet root. We would have preferred *Anchusa* as a heading).—Alkekengi (Winter Cherry. We would have preferred *Physalis*, although the other term is the common one in Europe).—Alnus (Alder bark).—Alstonia (Dita).—Ambra Grisea (Ambergris).—Ambrosia (Ragweed).—Under Ammonii Iodidum attention should have been called to the error in the formula, the iodide of potassium being in excess. Theoretically 480 grs. of ammonium sulphate require 1205 grs. of potassium iodide; the latter should not be in excess, but the former).—Ammonii Phosphas.—Ampelopsis.—Amyl Nitris (Amyl nitras is incidentally mentioned, but nothing is said of its actions and uses)—Amylenum (Amylene).—Anacardium.—Andira (Cabbage-tree bark).—Angelica.—Anilina (its uses in albuminuria might have been mentioned).—Antiaris.—Apomorphia.—Araroba (Goa Powder).—Areca (Betel).—Argemone.—Arnotta.—Arum (Indian Turnip).—Asparagus.—Under Atropiæ Sulphas, p. 254, line 18 from below, read *belladonnia* for belladonna).—Baptisia (Wild Indigo).—Benzoin (Spice bush)—Benzolum.—Betula (Birch).—Bidens (Spanish Needles).—Bismuthi tannas, valerianas.—Bistorta.—Boldus (Boldo).—Bolus (Bole).—Borago.—Bromal.—Brominii chloridum.—Bryonia.—Bursa pastoris (Shepherd's Purse).—Cahinca.—Calcii bromidum, hypophosphis (the almost general impurity of the commercial salt should have been mentioned),—iodas (no medical uses are given), iodidum, sulphas, sulphis.—Calendula.—Callitriche (Water Starwort).—Camphora monobromata.—Cannabis Indica (Preobraschensky claims to have obtained from it *nicotina*, not conia).—Carbonei bisulphidum, tetrachloridum (we would have preferred the simpler form *carbonis*, etc., etc.).

The list of substances so far given will enable our readers to form some idea of the great amount of useful material for reference interspersed between the regular officinal articles. We have no space to continue the list, but shall content ourselves with a few remarks on some of the substances mentioned in the succeeding portion of the work.

Under Cyclamen (p. 486), the formula of cyclamin should be $C_{20}H_{34}O_{10}$.—Eriodyction (p. 540) is not a correct spelling. It was made up from the two Greek words *ἔριον, wool*, and *δίκτυον, net;* hence it should be written Eriodictyon).—Erythrophlœum: this is the correct spelling, and not Erythrophlæum, as it has been commonly spelled, even by us in previous numbers of this journal. It is derived from *ἐρυθρός*, red and *φλοιός*, bark.—Iodinii bromidum (the composition of this, according to our information, is intended to be IBr_3, that is the terbromide of iodine; at least this is the compound in use among practitioners in this city).—Oleum phosphoratum (after quoting the British formula, requiring phosphorus to be dissolved in almond oil, the objections to this solution raised by Dr. J. Ashburton Thompson, should have been stated. Dr. Squibb's formula for a solution of phosphorus in cod-liver oil might have been introduced here).—Among the Opium alkaloids, Codamine has the formula $C_{20}H_{25}NO_4$ (it is isomeric with Laudanine); Deuteropine has probably the composition $C_{20}H_{21}NO_5$.—P. 1027 Phasianus banckiva should be Gallus b.—Quinidiæ sulphas, p. 1181, has the molecular weight 782 (not 836).—The therapeutic effects and the doses of those opium alkaloids (besides morphia), which have been used in medicine, should also have been given; for instance, that of codeia, narcotina, narceia, etc.—Under Sulphur, the employment in Great Britain of sulphuric acid as a precipitant for "precipitated sulphur" is mentioned; but it is also quite common in the United States. We would like to see the term "lac sulphuris" or "milk of sulphur" hereafter employed exclusively as a designation of precipitated sulphur containing calcium sulphate, and the pure precipitated sulphur as "sulphur precipitatum."—Under Cinchonidiæ Sulphas, p. 424, the heading "Medical Action and Uses" comprises only the following sentence: "They have not been determined by experiment or clinical observation." We think the substance had deserved a more extended notice, although perhaps no very elaborate and accurate physiological experiments have as yet been made with it by experts in pharmacodynamics.

The list of omissions in our judgment is very small and comprises some substances which are perhaps of questionable importance. But if such substances as Akazga, Amylenum, Condurango, Euphrasia, Galega, etc., are mentioned, the following might be found, perhaps, of sufficent value to be introduced into the work:

Acetum aromaticum.—Acidum chloraceticum.—Arsenici bromidum.—Atropiæ salicylas.—Piper methysticum (Ava-ava)—Balsamum Gurjunæ.—Calcii sulphidum.—Cerii nitras.—Coto cortex.—Drosera.—Ferri tannas.—Glyconin (perhaps as Glyceritum vitelli).—Koumys (perhaps as Vinum Lactis).—Lithii salicylas.—Morphiæ hydrobromas.—Platini chloridum.—Pulvis Morphiæ Co. (under morphia).—Quiniæ arsenias, benzoas, hydrobromas, salicylas.—Sodii chloras.—Sodii salicylas (is only incidentally mentioned on page 76; not in index).—Strychniæ acetas.—Syrupus calcis lactophosphatis.—Thymolum (is very briefly spoken of on p. 979; not treated as to its uses, etc.).—Zinci bromidum, iodidum.

Having now given a pretty thorough examination of the work, we are fully justified in stating that it is, taken altogether, one of the most important and creditable publications which have, of late, been issued by the American Press. The text is, in the main, brief and condensed, but still as complete as can reasonably be expected, taking into consideration the time which must elapse between the printing of the first and last sheets. It will be an indispensable reference both for the pharmacist and the physician, and we trust that the authors, whom we congratulate on the completion of their task, will never permit it to fall behind the time, but will subject the work to as frequent a revision as may be found necessary.

INDEX MEDICUS: A Monthly Classified Record of the Current Medical Literature of the World. Compiled under the supervision of DR. JOHN S. BILLINGS, Surgeon U. S. Army, and DR. ROBERT FLETCHER, M.R.C.S., Eng. New York: F. Leypoldt, 37 Park Row, large 8vo. $3.00 per annum.

WE have already announced the advent of this admirable work, and have the pleasure of saying, after an examination of its contents, that it fully justifies all expectations and is very creditable for those whose enterprise has led to its production. In view of the multitude of medical journals which have made their appearance within a few years, and the limited circulation of most of them, the occasion for an index of this character has become of almost universal necessity. The first number gives an extended list of the publications which are to be consulted in its compilation, covering twenty-four of the seventy-two pages.

An examination of the work cannot fail to impress one with its usefulness, and we hope that there will be no delay on the part of those who ought to support this journal, in remitting their subscriptions.

NOVELTIES.

Zimmerman's Lighting and Extinguishing Lamp.

In July last we gave a description of an apparatus for generating hydrogen and other gases which permitted the regulation of the process by the opening and shutting of a supply-cock. We have lately seen the cut of a lamp made by Mr. Autenrieth, of Cincinnati, in which this form of generator has been introduced in an ingenious manner; and since there are other features of the lamp which recommend it for the use of physicians and apothecaries who often need to make a light quickly at night, and who may not have gas, we give a description of it.

A coal-oil lamp having an argand wick and an opening (B) for filling, is provided with an india-rubber ball (D) at at its bottom. By compressing the ball a current of air is driven upwards through the wick-tube and the light is at once extinguished without the risk which comes from blowing *down* the chimney, as is sometimes done.

Supported on the opposite side of the stand are two glass vessels: A being a zinc-carbon battery. The upright rod *c* is provided with a spiral spring, which keeps the elements raised above the level of the fluid excepting when pressure is made on the knob *d*. C is a hydrogen generator of the sort above referred to. The mechanism of lighting the lamp is as follows: Pressure bring made on the knob *d*, the rod *c* descends, immersing the elements in the battery and also opening the stop-cock *k* by means of the toggle *i* and crank *h*. The hydrogen then escapes and is conducted by the tube *j* to a point opposite the wick of the lamp, a small hole in the side of the tube causing a fine stream of gas to play on the edge of the wick. At the same time a galvanic current is carried by the spiral wires *ff* to the burner, the connection being made by means of a thread of platinum wire. The resistance offered by the latter to the passage of the current causes it to become so hot that the stream of gas is ignited, and this, in turn lights the wick. When the finger is taken off the knob *d*, the elements are raised from the battery fluid, and the stop-cock *k* is closed. The gas then collects in the vessel *g* until it forces out the acid into the inclosing jar C, and the generation of gas ceases until the operation is repeated.

Witte's Enameled Graduates.

It has been customary to caution pharmacists and chemists against the purchase of graduates on which the markings were painted and not engraved, on account of the liability of the marks to become erased. This objection does not exist in the case of the graduates made under Mr. Witte's patent, since the material used is a black enamel, and is so firmly attached to the glass by subsequent firing that nothing short of fluoric acid and its compounds will remove it. Another feature of these graduates is their accuracy. We have carefully examined one which was graduated for cubic centimetres and found the marks correctly placed in each instance with the exception of the 90 and 100, each of which was two cubic centimetres short, a practically insignificant variation.

A third feature worthy of notice is the fact that these graduates can be had with graduations for cubic centimetres, fluid drachms, and fluid ounces on the same vessel—an arrangement which is particularly handy just at present.

Witte's Enameled Labels.

The labels for shelf-bottles, counter-urns, jars, etc., made by the process above referred to are not only handsome, but practically indestructible. They are entirely free from the liability to chip off to which glass labels are subject, and being continuous with the surface of the glass, they are easily cleaned.

Ziegler's Polishes.

The boot, stove, and furniture polishes made by Henry S. Ziegler, of 609 St. John St., Philadelphia, have all been well tried by us, and we have no hesitation whatever in saying that they are satisfactory.

Borthen's Cod-Liver Oil.

While the varieties of brown oil are found in practice to be especially valuable in the treatment of many affections, there is no doubt that their strong taste is for most persons so decidedly objectionable as to interfere materially with their use, and the light oils must be taken instead. Now there are a number of these which could be mentioned, and it would be difficult to say whether one is to be preferred to another. One of the latest received varieties is that of Borthen, for whom Mr. Geo. I. McKelway, of Philadelphia, is the sole agent for America. This oil attracted much attention at the recent Paris Exhibition, and is *one* of the finest we have seen. Although not much inclined to taste of samples sent to us, we *have* tried this one by that method, and cannot see anything disagreeable about it. We certainly should not want it disguised in an emulsion or other mixture if we had occasion to use it as a remedy.

Trowbridge's Impervious Paper.

Mr. F. Trowbridge, of Milford, Ct., prepares paper so as to render it impervious to water and air, and thus adapts it to a great variety of purposes in medicine, surgery, pharmacy, the arts and commerce. The sample sent us is 18x24 inches in size, and retails at 10 cents, or 75 cents for a package of 10 sheets.

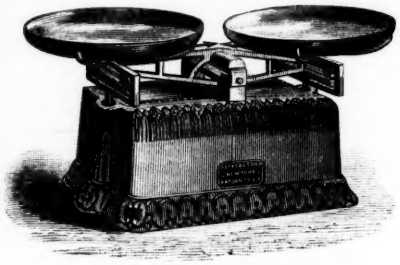
Anhydrous Lard.

The pure lard sold by F. K. Edwards, of 161 Maiden lane, N. Y., and put up in 2, 5, or 10 lb. cans, is not only well adapted for the making of pomades (there being nothing yet discovered which will take its place), but as a basis for cerates to be applied to the lips, nostrils, or conjunctiva, or for the manufacture of cosmetics, it is admirably fitted. The sample box sent to us has served to prevent the roughening and chapping of hands from exposure and frequent washing during the cold weather, and has required no perfume either to cover rancidity, or to make it otherwise acceptable.

Edward's Ox-Gall Soap.

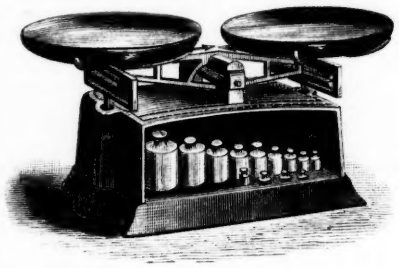
Another specialty of this dealer is a soap made with ox-gall for purposes of injection. It is in cakes $2\frac{3}{4}$x1x$\frac{3}{4}$ inches in dimensions, and we see no reason why it may not

be an exceedingly useful preparation, especially in the constipation of women and children, where a sluggish intestine allows fæcal matter to accumulate in small hardened masses which an ordinary enema will often fail to dislodge.



Becker & Son's new Counter-Scales.

THE well-known manufacturers of fine balances and weights, Messrs. Becker & Son, 4 Murray st., N. Y., have constructed and placed on the market a new counter-scale, of which we give an illustration. The body is made of iron, being in form of a hollow box, open at the rear; the beam consists of two parts, the portion supporting the



scale-pans being above the case, while the compensating beam is below, at the bottom, and is connected with the upper beam by two upright connections passing through two lateral holes in the casting. The empty space in the box is intended for keeping the weights. The scales are made of three sizes, having respectively pans of 6, 8 and 10 inches diameter. The prices are $9, $13.50, and $18.00.

Mitchell's Soluble Suppositories and Bougies.

WE have received from C. L. Mitchell, of Ninth and Race streets, Philadelphia, whose wares we have already favorably noticed, samples of two new varieties of these goods, viz., a vaginal suppository which, instead of being solid and thus consuming a larger quantity of material than is needed, is made hollow, like a finger-stall.

The opening can be packed with cotton and thus it may be rendered as soft or firm as occasion demands. The medicinal substance is, moreover, concentrated in the gelatine near the surface and is liberated much more rapidly than by the old plan.

The nasal bougies have become favorably known as a means for treating inflammations of the nasal cavities, and their use is likely to become much more popular.

Proctor's Pepsin Preparations.

FROM WM. PROCTOR, JR., CO., of Ninth and Lombard sts., Philadelphia, we have two preparations of pepsin, viz., the powder and wine. The former we have tried in a case of atonic dyspepsia, with good results; the latter we are keeping with the purpose of testing it with egg-albumen after it has stood for a time. Thus far our opinion of this pepsin is favorable.

NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue.*]

No. 523.—**Mistura Ferri et Conii** (A., Hotchkissville, Ct.).

There is only one such mixture generally quoted. It originated with Dr. King, the author of the American Dispensatory, who gives its composition as follows:

Precipitated carbonate of iron	10	ʒ
Inspissated juice of conium	5	ʒ
Tincture of tolu	6	ʒ
Oil of cinamon	12	gtt.
" " wintergreen	12	gtt.
White sugar	2	ʒ
Madeira wine	½	O.
Water	½	O.

Mix together, and allow to stand for a week, when it will be ready for use.

We do not know *Tilney's* mixture of iron and conium, but should be glad to be informed by some of our readers.

No. 524.—**Aromatic Elixir of Licorice** (K., Indianapolis, Ind.).

This, as well as the compound elixir of taraxacum, is sometimes called by physicians *Quinia Elixir*, because it is an excellent vehicle for disguising the taste of quinine. Mr. G. W. Kennedy gives the following formula:

Moisten 2 oz. of the best licorice root in coarse powder with sufficient of a mixture of 6 fl. oz. stronger alcohol and 6 fl. oz. water; allow to stand for 12 hours, pack in a percolator, pour on the balance of the mixture, and percolate with diluted alcohol until 12 fl. oz. have passed. To this add 4 fl. oz. of simple syrup, 1½ fl. drachm of spirit of orange, and 8 min. of spirit of cinnamon. The spirit of orange is obtained by dissolving 1 fl. oz. of the oil in 15 fl. oz. of stronger alcohol.

No. 525.—**Wine of Pepsin** (K., Indianapolis, Ind.).

The directions of the German Pharm. are as follows:

Take the stomach of a hog, or the fourth stomach (abomasus) of an ox. Turn it inside out, and having freed it from the undigested matter, wash it with cold water; then strongly scrape off, by means of a bone spatula, the peptic mucus from the mucous membrane.

Mix carefully one hundred parts	100

of this mucus with

Glycerin, fifty parts	50

previously diluted with

Distilled water, fifty parts	50

Introduce the mixture into a large flask; add of

Genuine white wine, one thousand parts	1,000
Pure hydrochloric acid, five parts	5

and shake briskly. Then macerate at a temperature not exceeding 20° C. (= 68° F.) for 3 days, shake frequently, and finally filter.

It may also be prepared from saccharated pepsin, as follows:

Saccharated pepsin	160	gr.
Dilute hydrochloric acid	1	fl. ʒ
Sherry wine	16	fl. ʒ

Rub the pepsin with 4 fl. oz. of the wine, previously mixed with the acid; pour it on a filter, and pass the rest of the wine through the latter. Each fl. oz. contains 10 grs. of saccharated pepsin.

No. 526.—**Wine of Coca** (J. E., New Orleans).

This is an officinal preparation of the French Pharmacopœia, and is prepared in the following manner:

Coca leaves	30	parts.
Alcohol of 60%	60	"

Macerate for 24 hours; then add

Genuine white wine	1000	"

Macerate for 10 hours longer, frequently shaking; then strain, express, and filter.

No. 527.—**Ointment of Nitrate of Silver** (I. H. McB., Buffalo, N. Y.).

It is said that vaseline forms a good base for making an ointment with nitrate of silver. Whether such an ointment will find much application as a remedy may be doubted, but we should judge it to be a very good pomade for dyeing the hair and beard, provided it keeps as well as it has been alleged.

No. 528.—**Compound Elixir of Taraxacum** (A. C. N., Easton, Pa.).

This is used like the *Aromatic Elixir of Licorice* (see No. 524) for disguising the bad taste of certain remedies, like quinine. The usual formula is the following:

Dandelion root	6 ℥
Wild cherry bark	4 ℥
Gentian root	1 ℥
Orange peel	2 ℥
Cinnamon,	
Coriander	āā 1 ℥
Anise,	
Caraway,	
Cardamoms	āā ½ ℥
Licorice root	1 ℥
Simple syrup	2½ O.
Alcohol (stronger),	
Water	āā q. s.

Mix one volume of stronger alcohol with three volumes of water. Reduce the solids to a moderately fine powder, moisten them with the diluted alcohol, pack them in a percolator, and pour dilute alcohol on top until 6½ pints of percolate have passed. Mix this with the syrup.

No. 529.—**Ammoniacal Glycyrrhizin.**

In connection with the foregoing query, we would draw attention to the extraordinary power which the ammoniacal glycyrrhizin possesses of covering the taste of quinia. It is at least 16 times stronger than the root, soluble in water and syrup, and by no means expensive ($1.50 per ounce.

No. 530.—**Freckles** (W. B. R., Manitowoc).

The freckles caused by exposure to sunlight, or which sometimes appear during March winds in this locality, can ordinarily be removed by a lotion of borax in water or rose-water, but the freckles which are natural to some skins and which are due to a deeper deposit of pigment can no more be removed by external applications than the coloring-matter in the skin of a Negro or Mongolian can, and it is useless to try.

No. 531.—**Golden Tincture** (C. H., Clay Centre, Kan.).

This name is applied to various preparations and compounds, and, unless some hint is given as to its intended use, or unless custom in any section of the country has imparted this name to a special, well-defined preparation, it is difficult to say what should be supplied. The following have been chiefly called by this name:

1. Bals. tolu 2 oz.
   Canada pitch (hemlock gum) 2 oz.
   Resin of guaiac 2 oz.
   Myrrh 2 oz.
   Oil of hemlock 3 oz.
   Oil of wintergreen 2 oz.
   Alcohol 1 gall.

Mix. Allow to macerate for 2 weeks, frequently agitating. Dose: a fluid drachm in half a wine-glass of sweetened water; or in a severe case, it may be increased to an ounce. To be used internally in rheumatism, colic, flatulency, acid stomach, hysteria, etc.—King's *American Dispensatory*, p. 16 (the index gives the names "golden tincture" and refers to this page).

2. Ether 3 parts.
   Acetated tinct. of opium 2 "
   Comp. spirits of lavender 1 part.

Mix. Dose: 10 to 20 drops. In flatulence, diarrhœa, etc.

3. Ether 1 fl. ℥
   Tinct. of opium 1 fl. ℥
   Chloroform 2 ℥
   Alcohol 1 fl. ℥

Mix. Dose: 5 to 30 drops, as a carminative. Makes an excellent local application in neuralgia and other painful affections.

4. Lamotte's Golden Tincture (Bestuscheff's Nerven-Tropfen; Lamotte's Gold-Tropfen) is
   Tinctura Ferri chloridi ætherea,
prepared as follows:

Sol. of ferric chloride, sp. gr. 1480	10	parts.
Ether	35	"
Alcohol	105	"

Mix the ether and alcohol, then add to it, with agitation, the solution of ferric chloride, transfer the mixture into tall, narrow, glass-stoppered vessels, and expose them to the rays of the sun, until the brownish-yellow color has disappeared. Then place them into the dark, and occasionally remove the stopper, until the liquid has reacquired a yellowish or brownish-yellow color.

Dose: 10 to 30 drops in chlorosis, nervous debility, etc.

5. Spiritus Ætheris Co., or Hoffmann's Anodyne, is commonly supplied in some portions of the country (Pennsylvania, New Jersey, etc.), when Golden Tincture is asked for.

6. Tinctura dulcis; Gold-Tropfen.

Potass. acetate	10	parts.
Alcohol	400	"
Simple syrup	75	"
Spts. of chloric ether	40	"
Spts. of acetic ether	20	"
Tinct. of (burnt) sugar	25	"

Mix and dissolve. Dose: ½ to 2 drachms.

No. 532.—**Planche's Purgative Milk** (Dr. J., Syracuse, N. Y.).

The formula which you sent us a copy of is not correct. It should be as follows:

Resin of scammony	0.40 gm.	(6 grs.)
White sugar	10.00 gm.	(2½ ʒ)

Triturate and add gradually:

Pure milk	100.00 gm. (ab. 3 fl. ℥)
Cherrylaurel water	3 or 4 drops.

S. to be taken in one dose. Should only be administered to adults, never to children.

No. 533.—**Paresi's Styptic Collodion** (S., Washington, D. C.).

The formula has already been given in our volume for 1878, page 92. We will repeat it here:

Collodion	100	parts.
Carbolic acid, cryst	10	"
Tannic acid	5	"
Benzoic acid	1½	"

No. 534.—**Hays' White Liniment** ("Query").

We are unable to learn anything concerning a liniment having this name, but understand that one known as "Hays' Liniment" is made by Comstock & Co., of Utica, N. Y.

An Irish School of Pharmacy.—The Council of the Pharmaceutical Society of Ireland, at its last meeting, reported adversely to the establishment of a school of pharmacy in Ireland at present.—*Med. Press and Cir.*

PRESCRIPTIONS AND FORMULÆ.

Aromatic Liquid Pepsin (*Biroth*).—

Saccharated pepsin	16.5	parts or grams.
Hydrochloric acid	3.7	" "
Glycerin	177.1	" "
Orange flower water	236.0	" "
Bitter almond water	2.0	" "

Dissolve the pepsin in the aromatic waters, to which the acid has been added; then add the glycerin. Dose: ½–1 teaspoonful for children; a tablespoonful for adults.—*L'Orosi*.

Chloral-Liniment (*Catillon*).—

Hydrate of chloral	6 parts.
Oil of sweet almonds	30 "

Dissolve by rubbing in a mortar, or by mixing them in a flask and immersing the latter into hot water.

Ointment for Piles.—

℞ Pulv. opii	ʒ ss.
Acid. tannici	ʒ i.
" carbolici	gr. xv.
Ol. tabaci	♏x.
Liq. plumb. subacet.	♏xx.
Unguenti simpl.	ʒ i.

Mix intimately. To be used night and morning.

Lotion for sore Nipples.—

℞ Sodii boratis	ʒ ij.
Cretæ præcip.	ʒ i.
Alcoholis	fl. ʒ ij.
Aquæ	fl. ʒ ij.

Mix; shake well before applying.—*The Practitioner*.

Fothergill's Cough Mixture.—Numerous trials have been made in the wards of the Episcopal Hospital, in Philadelphia, by Dr. Bennet, of Dr. J. Milner Fothergill's boasted cough mixture, from the use of which he claims such excellent results, viz.:

℞ Acid. hydrobrom.	gtt. xx.
Ext. scillæ	gr. ss.
Spts. chloroformi	f. ʒ ss. M.

Sig. Every three hours.

The experience of the attending physician has been that it does not at all take the place of morphia, as claimed by its originator.—*Med. Rec.*

To arrest Vomiting during Pregnancy.—

℞ Cerii oxalat.,	
Ipecacuanhæ	āā gr. i.
Creasoti	gtt. ij. M.

Sig. To be taken every hour.

Chloral-Ointment (*Catillon*).—

Hydrate of chloral	6 parts.
Lard	27 "
White wax	3 "

Melt the lard and wax in a beaker placed into hot water, add the chloral in powder, and dissolve. Then let cool.

Chloral-Suppositories (*Catillon*).—

1. Containing 1 gram (15½ gr.) each:

Hydrate of chloral	1 gram.
White wax	1 "
Cacao butter	3 grams.

2. Containing 2 grams (31 gr.) each:

Hydrate of chloral	2 grams.
White wax	1.5 "
Cacao butter	2.5 "

Melt the wax and cacao butter in a beaker or test-tube, add the chloral in powder. When dissolved pour into moulds.—*Rép. de Pharm.*, 1878, 533.

CORRESPONDENCE.

LIMOUSIN'S CACHET MACHINE.

NOTHING is perfect under the sun; not even *Limousin's Cachet Machine*. A friend of mine (Mr. Meschenmoser) suggests that the board containing the three sizes of holes be divided into three slabs (one for each size), and the ends of each provided with a conveniently sized button (or knob). When the four (or more) cachets have been finished, lift up the slab by the two buttons, and turn the cachets out on the counter, replace the slab, and so on. This taking up and turning out is easier and quicker than lifting each cachet separately from beneath with the finger.

Very respectfully yours,

DOBBS FERRY, N. Y., February 28th, 1879. HANS M. WILDER.

THE VOLUMETRIC ESTIMATION OF SUGARS BY PERMANGANATE.

BY HENRY B. PARSONS.

THE method now submitted has been employed by Prof. Peter Collier, of the U. S. Department of Agriculture, with good results, and from my own experience I am led to think it as accurate and more rapid than the ordinary application of Fehling's method. The principles upon which this process is based will be briefly stated: If a solution containing glucose be warmed with an excess of Fehling's solution, red cuprous oxide will be deposited in the proportion of five molecules ($5Cu_2O=714$ parts by weight) for every two molecules of glucose present ($2C_6H_{12}O_6=360$ parts by weight).

The cuprous oxide thus formed is separated by decanting the supernatant blue liquid, and is dissolved in a dilute acid solution of pure ferric sulphate ($Fe_2(SO_4)_3$), whereby ten molecules of ferrous sulphate are produced, as shown in the equation:

$$5Fe_2(SO_4)_3+5Cu_2O+5H_2SO_4=$$
$$=10FeSO_4+10CuSO_4+5H_2O.$$

This solution is now largely diluted with pure distilled water, and titrated with a solution of potassic permanganate of known strength. One molecule of permanganate is required to oxidize the ferrous salt, thus:

$$10FeSO_4+K_2Mn_2O_8+8H_2SO_4=$$
$$=5Fe_2(SO_4)_3+K_2SO_4+2MnSO_4+8H_2O.$$

Following the process again, we see that

$$\left\{\begin{matrix}2\ Glucose\\2C_6H_{12}O_6\end{matrix}\right\}=\left\{\begin{matrix}5\ \text{Cuprous oxide}\\5Cu_2O\end{matrix}\right\}=$$
$$=\left\{\begin{matrix}10\ \text{Ferrous sulph.}\\10FeSO_4\end{matrix}\right\}=\left\{\begin{matrix}1\ \text{Pot. permang.}\\K_2Mn_2O_8\end{matrix}\right\}$$

Omitting the second and third steps, we see that

$$\left\{\begin{matrix}2\ \text{Glucose}\\2C_6H_{12}O_6\\360\ \text{parts}\\1\ \text{part}\end{matrix}\right\}=\left\{\begin{matrix}1\ \text{Pot. permang.}\\K_2Mn_2O_8\\316.2\ \text{parts}\\.8783+\ \text{part}\end{matrix}\right\}$$

If, then, the amount of permanganate in a given solution is known, the amount of glucose represented may be found by multiplying by .8783+. It will be seen that this is a modification of Schwartz's method for the estimation of copper by permanganate; see "Sutton's Volumetric Analysis," § 44, 2, third edition.

For the present purposes, sugars may be divided into two classes:

1. *Sucrose*, or *Cane Sugar* ($C_{12}H_{22}O_{11}$).

This is what is commonly known as "sugar," and in its various grades of purity is the sweetest and most valuable commercial form. It is changed to "inverted" sugar by twenty minutes' boiling with 50 parts of two per

cent mineral acid. The change is due to the appropriation of one molecule of water, whereby two glucoses are formed which have opposite and unequal effects on polarized light. They may be considered as one, however, so far as this estimation is concerned. The change is

$$\left\{\begin{matrix}\text{Sucrose}\\ C_{12}H_{22}O_{11}\end{matrix}\right\} + \left\{\begin{matrix}\text{Water}\\ H_2O\end{matrix}\right\} = - \left\{\begin{matrix}\text{Dextrose}\\ C_6H_{12}O_6\end{matrix}\right\} + \left\{\begin{matrix}\text{Levulose}\\ C_6H_{12}O_6\end{matrix}\right\}$$

Sucrose slowly reduces Fehling's solution above 75° C., not at all below (according to Prof. Moore, of Hoboken, N. J.), but inverted sugar promptly reduces it below 70° C. Hence, in a mixture of sucrose and inverted sugar, as syrup or molasses, the inverted sugar already present may be determined from the cuprous oxide it will reduce below 70 to 75° C. In another portion, the total glucose after inversion with acid may be determined. The difference between the two amounts of inverted sugar equals glucose produced from sucrose; this difference multiplied by .95 equals the sucrose.

2. *Glucoses.*

This class includes all sugars of the composition $C_6H_{12}O_6$; the commonest forms are starch glucose ($C_6H_{12}O_6.H_2O$); the inverted sugar already mentioned; and fruit sugar ($C_6H_{12}O_6$). Lactose ($C_{12}H_{22}O_{11}.H_2O$) has many reactions in common with glucoses. It will be understood in what follows that the word "glucose" is used in this general, rather than in a specific sense, and represents any sugar of the composition $C_6H_{12}O_6$.

II. *The Analytical Method.*

The solutions and reagents necessary are as follows:

1. *Sugar Solutions.*

If the sugar is solid, dissolve one to two grams in a litre of water; of molasses or syrup take twice as much. These solutions must be freshly made; solutions of starch glucose are especially liable to change upon standing, and sometimes will reduce more Fehling's solution than at others. Bloxam (p. 529) mentions similar optical changes in solutions of starch glucose which have stood some time.

2. *Fehling's Solution.*

Dissolve in water sufficient to make a litre, 34.64 grams well-formed crystals of copper sulphate, 173 grams of crystallized Rochelle salts, and lastly 55 grams of sodic hydrate. Of this solution 1 cc. equals .005 glucose ("Attfield's Chem.," 7th ed., p. 593).

3. *Ferric Sulphate Solution.* $Fe_2(SO_4)_3$.

This must not contain the *slightest traces* of ferrous salt or of nitrogen oxides. The U. S. P. Liquor Ferri Tersulphatis, diluted with two volumes and strongly acidulated, is what is wanted. It will not do to substitute ferric chloride, as is recommended by Schwartz.

4. *Permanganate Solution.*

Dissolve 1.8 grams pure crystallized potassic permanganate in water to make a litre. To find the actual strength of this solution, proceed as follows: Into each of five beakers run 10 cc. of a decinormal solution of oxalic acid, containing 6.3 grams of the crystallized pure acid in a litre. To each liquid add 20 cc. water and 30 drops of sulphuric acid, heat nearly to boiling, and from a burette run in the permanganate until the liquid has a permanent pink tint. The average number of cubic centimetres of permanganate used to act upon the oxalic acid, less the slight amount necessary to color the liquid, will contain .03162 of $K_2Mn_2O_8$. From this can be calculated the amount of permanganate in 1 cc.; the amount so obtained multiplied by .87833 will equal the amount of glucose represented by 1 cc. of permanganate.

The solution should be kept in a glass-stoppered bottle, well labelled.

III. *Manipulations.*

To the prepared sugar solution add an excess of Fehling's solution, set the dish on the water-bath, and suspend a thermometer in the liquid, which must be heated *not above* 75° C., for twenty minutes. Repeat the operation with another equal amount of sugar solution, which has been inverted as directed in I., 1. Allow the dishes to cool, then very carefully decant the liquid into a beaker, so as to keep all the cuprous oxide in the dish. In case any oxide has been poured into the beaker, allow it to settle, and again decant. Dissolve the oxide in a moderate amount of ferric sulphate, add more sulphuric acid, dilute to 200 or 300 cc., and titrate immediately with permanganate.

This process, like all others, requires careful attention to details, pure chemicals, and more or less practice; but with these precautions it can be made to yield accurate results. A large number of determinations can be made by an economical arrangement of work.

The Terrible Experience of the Internal Revenue Samplers.—"Will you have a drink of bitters?" asked the genial Israel Kimball, chief of one of the Internal Revenue Bureau divisions, of the representative of the *Sunday Herald*.

"Where are they?"

"Here they are; help yourself. I will appoint you Department taster if you will accept the place. We have perhaps a thousand bottles here to be sampled by somebody."

"What in the world are you doing with all those bottles and boxes of bitters?"

"Sit down. It is real funny. Some months ago Special Agent Gavett, of Missouri, reported to the Department that all over the West small dealers were selling medicinal bitters by the glass as a beverage, and that they contained distilled spirits enough to make them liable to spirit tax, and the dealers liable to license tax. The dealers were avoiding national, State, and municipal license and other tax, on the ground that they were simply proprietary medicines, tonics, etc."

"Did they pay no tax?"

"Yes. They paid the proprietary medicine stamp only. Well, immediately these bottles of bitters came pouring in. Who was to taste them, was the question. I tried it awhile, and came near being laid out a corpse. Dr. Grant, my assistant, tried it, and although he only sampled twenty bottles he is now in bed, covered all over with plasters and wrapped in blankets. I called on him this morning. He is sallow and emaciated and has an expression as though he had lived on persimmons a year."

"Why, that is awful!"

"Yes. Three of our clerks who tried it (and I tell you confidentially several members of Congress tried it, but don't give that away), three of our clerks who went into the tasting business, are absent from their desks. Try some more?"

"No, I thank you. My mouth is all puckered up now. Have you decided the case?"

"Yes," said he (as he slid a quart bottle into my overcoat pocket); "we decided some time ago that they were subject to tax. But a lot of Congressmen came here and went into the tasting business, and, on their way to get brandy and ginger, through their influence the decision has been changed. We have decided that they are not taxable. We lose the revenue, but we and the bitters have our revenge. Congressmen are dying rapidly."

"Terrible!"

"Yes; and I have given bitters to every newspaper man who comes in. Perhaps that will account for some of the alarming despatches that have been sent from here of late, some of which would have been important if true."

As the *Herald* representative walked suddenly off, with both hands pressing hard upon his stomach, he uttered a feeble, painful "good-by!"—*Wash. Sund. Herald* in *Inter. Rev. Rec.*

Hypodermic Injection of Dialyzed Iron has been tried in Philadelphia in the Episcopal Hospital, but in every case the trial was brought to an end while the evidences of the value of the method were yet negative, owing to the severe local irritation produced.

NEW PATENTS.

[The following list is compiled from official sources, especially for NEW REMEDIES, *by S. H. Wales & Son, Solicitors of Patents, 10 Spruce St., New York, who will furnish gratis to subscribers any information relating to this department.*

PATENTS GRANTED DURING DECEMBER, 1878.

Cane-juice, defecating, W. H. Pilant.....210,556
Caoutchouc, artificial, A. G. Day.....210,411
Capsules, apparatus for filling, T. Whitfield.....210,589
Filtering frame, C. L. Holt.....210,534
Kerite, compound for manufacturing of, A. G. Day.....210,406
Kerite from gum, A. G. Day.....210,408
Kerite, manufacturing of, A. G. Day.....210,409
Kerite, preparing oils for manufacturing of, A. G. Day.....210,410
Malt extract, J. Carnick.....210,496
Medical compound, J. W. B. Turk.....210,477
Rubber, compound of India, A. G. Day.....210,407
Salt from brine, recovering, I. H. Konig.....210,541
Scales, spring, L. E. Brown.....210,421

December 10th.

Blueing package, H. Sawyer.....210,591
Cereals, process for drying, F. A. Luckenbach.....210,793
Nitro-cellulose, I. W. Hyatt.....210,611
Pyrites, treating burnt, J. Mason.....210,619

December 17th.

Bottle-stopper fastener, F. Deming and P. Bacher.210,926
Corset, galvanic, S. W. Geery.....210,932
Iron, decarbonizing, A. R. Reynolds.....210,964
Soap, medicated, E. A. Adams.....210,889

TRADE MARKS REGISTERED DURING DECEMBER.

Medicinal Preparations.

6,856. Benjamin W. Dyer, New York. The arbitrarily selected words "Black Wonder."
6,869. A. J. Seymour, Pecatonica, Ill. The vignette or picture, and the name "Seymour" in connection with it.
6,882. Ely Bros., Owego, N. Y. The arbitrarily selected word "Cream Balm."
6,886. Lorrain S. Hodgkins, Brewer, Me. The letters "H. B. B.," arranged as a monogram, and the arbitrarily selected words "Great Prairie."

Soap, Perfumery, etc.

6,869. The Wexford Co., New York. The word "Belgravia."
6,877. Americus Bell, Matawan, N. J. A monogram composed of the letters "A. B."
6,886. Penrose W. Hirsh, Camden, N. J. The letters "XXX."

Miscellaneous.

6,866. The Western Manufacturing Co., San Francisco, Cal. The word-symbol "Saponica," and the name or title "Boland's."
6,896. Vogeler, Son & Co., Baltimore, Md. The word-symbol "Ocean Spray."

LABELS REGISTERED DURING DECEMBER.

1,791. "Bancroft's German Balsam." Atha B. Crooks, Newark, N. J.
1,792. "Rock Oil Salve." John T. Clark, Pilot View, Ky.
1,798. "Rose Cream." James S. Plumb, Syracuse, N. Y.
1,810. "Fluid Cosmoline" (Petroleol). E. F. Houghton & Co., Philadelphia, Pa.
1,812. "Siberian Chilblain Ointment." James S. Plumb, Syracuse, N. Y.
1,818. "Pectoral" James D. Judge, Boston, Mass.
1,819. "Krauser's Florida Cough Syrup." E. Krauser & Bro., Milton, Pa.

ITEMS.

College of Pharmacy of the City of New York.—The 49th course of lectures, just completed, has been attended by a larger class than any previous one. The total number of students was 252, of whom 136 belonged to the Junior Class or are matriculated for special departments only, while 116 constituted the Senior Class. The written examinations were held on March 4th, 6th, 8th, and the practical examination on March 10th, 11th, 12th. Eighty-two candidates presented themselves, and 65 passed the examinations successfully. The following is a list of the graduates:

Samuel Abraham, Louis Bangert, Samuel M. Barbarow, Smith Bartlett, Conrad W. Braeutigam, Ernst Breiting, John Breuning, Percival Brewer, Albert F. Brugman, Christian F. Burger, Jr., Bernard F. Callaghan, M. Frank Casey, Frederick Cassebeer, Herman F. Cassebeer, Thelesphore Chagnon, Foxwell C. Cutts, Charles N. Davidson, Carl Koepfner, Hicko Dorestan, William H. Ebbitt, E. Walter Faber, Louis E. Feindt, William W. Fowler, George B. Frazee, George W. Freygang, Paul L. Frohwein, Theobold R. Frohwein, Dennis Gerrity, J. Louis Golm, Martin Heldt, Jr., James L. Hendrickson, Frederick Herdling, August Hoerle, George H. Hoerning, Hermagoras Isea, John Kremer, Jr., Henry E. C. Kuehn, Mathew Mahler, George J. Martin, Charles H. May, Isaac Meseritz, Charles P. Moll, James T. Morehouse, Robert Muellenbach, Simon Nauheim, Sidney H. Neergaard, John Oehler, Hermann Orlewitz, Jacob Passwalt, Frederick Petri, Jonas Pfeiffer, George Redder, Floyd W. Rogers, Hilon H. Sawyer, Gottlieb Schick, Henry Schlecker, Jr., Gustavus Schlegel, Frank A. D. Smith, Mallory H. Taylor, Greenleaf Vorhees, William W. Washburne, Joseph Weidenfeld, Rudolph C. Werner, Alfred W. Wiener, Alwin J. Wilhelm.

The total number of marks which could have been obtained in the examination amounted to 716. Out of this number the first thirteen candidates obtained respectively: 682 (95.2%), 975 (94.2%), 661 (92.3%), 660, 650, 647, 643, 637, 621, 621, 618, 618, 617 marks.

The commencement takes place on Tuesday, March 18th, at 8 P.M., at Chickering Hall, and the annual meeting of the College on Thursday, March 20th, at 8 P.M.

As we go to press before this date, we shall give a report of the commencement exercises and of the election of officers in our next issue.

St. Louis College of Pharmacy.—The annual meeting of the Alumni Association of the St. Louis College of Pharmacy was held Tuesday evening, Feb. 18th, 1879, at the college rooms. After the reports of the various committees were read, the following officers were elected: *President*, Chas. Geitner; *Vice-Presidents*, Jas. A. Watkins and O. E. Trentler; *Recording Secretary*, Fred. F. Reichenbach; *Corresponding Secretary*, Chas. E. Smith; *Treasurer*, Ad. Pfeiffer; *Registrar*, Thos. F. White.

Members of the Executive Board, J. W. Tomfohrde, R. H. Hunstock, Martin Goehring, Paul Nacke, and Peter Hoffmann. Respectfully,

FRED. F. REICHENBACH,
Recording Secretary.

Tape Worm in Cucumbers.—DR. LEIDY, of Philadelphia, has announced the discovery that cucumbers are liable to be infested with tape-worm. At a meeting of the Academy of Science, Philadelphia, he exhibited a specimen of tape-worm taken from the inside of a large cucumber. It is said to have had all the characteristics

of a true tape-worm, but belonged to an unknown species, the peculiarity being that the ovaries, containing the round yellow eggs, are confined to the anterior extremity of the segment.—*Cincinnati Lancet.*

Green Soap.—MR. BERNBECK gives the composition of a superior quality of medicinal green soap, prepared by E. and C. Bingel, in Düsseldorf, as follows:

14.17 caustic potassa and soda.
44.92 oil, calculated from the oleic acid found.
40.91 water.

100.00

The alcoholic solution leaves a slight residue, consisting of alkaline carbonate.—*Pharm. Zeit.*, 1879, No. 10.

False Calabar-Beans.—During October last, two different kinds of beans were offered in the London market as calabar-beans; one of them was the seed of *Entada scandens*, which are circular, 1 to 2 inches in diameter, about ½ inch thick, and have a very small hilum; the other was the seed of a species of *Mucuna*, about ¾ inch broad, ¼ inch thick, and provided with an extremely large hilum, passing nearly all around the seed. Genuine calabar-beans were scarce.—*Pharm. Zeit.*, 1879, No. 12.

A new Antiseptic has been introduced by Pennes, under the name *Ethérolé antiseptique*, which consists of salicylic acid and eucalyptol. It is an excellent preservative for zootomic preparations, and has also been successfully employed in some French hospitals as an antiseptic application to wounds.

John Mudge Merrick, who died on Tuesday, February 25th, at Walpole, was graduated in 1859 from the Lawrence Scientific School at Cambridge. After serving for some time as assistant in chemistry to Professor Horsford, he left the school to take a position in the high school at Natick. From there he went to New Bedford, to serve as principal of the high school at that place. Always industrious and enterprising, he spent his summer vacations while at New Bedford as chemist to the Boston Diatite Company. After leaving New Bedford he accepted the position of superintendent of this company. In 1868 or '69 he began business in Boston as an analytical and consulting chemist, and has carried on this business until the present time. In 1874 he was elected professor of chemistry in the Massachusetts College of Pharmacy. Mr. Merrick's contributions to the literature of chemistry have been numerous. Besides many articles in the *American Chemist* and *Chemical News*, he was one of the special contributors to Johnson's Encyclopædia. He was a Fellow of the American Academy of Arts and Sciences, and of the New York Academy of Sciences. His death was caused by pneumonia with which he was ill but about ten (10) days. His age was forty years and ten months.

Fire and Water-proof Cement.—DR. WAGNER gives the following directions: Coagulate 2 lbs. of fresh milk by means of a little vinegar, remove the whey, and beat this with the white of 4 to 5 eggs (or with fresh bullock's blood). Then mix it intimately with finely-powdered slaked lime. This cement may be used for metallic or earthen vessels, etc., which should be dried with heat in the open air.

Ostrich Farming.—The ostrich-pepsine manufacturers of the future (see March number, page 77) will be delighted to learn that ostrich-farming is about to be undertaken on a large scale in South Africa. It has been carried on in a small way for a considerable time, and appears to have paid very well. As an illustration of the prices obtained for ostriches in Cradock, the Register states that Dr. Fehrsen obtained £365 for a pair of six-year-old breeding birds. A proposal has been made to establish a Joint Stock Ostrich Farming Company in the Fort Beaufort District, with a capital of £20,000 in 4,000 shares of £5.

Export of Cinchona Bark from the U. S. of Colombia.—During the last 14 years, from 1865 to 1878, the value of cinchona bark shipped from ports in the U. S. of Columbia to the United States has been as follows:

1865 ..	$135.989	1872.....	$145 052
1866....	120,268	1873	807,432
1867....	313.461	1874.....	860.425
1868....	228,845	1875.....	800.374
1869....	406,910	1876.....	954,690
1870....	424,342	1877	314,420
1871....	218.439	1878.....	900,370

PHARMACEUTICAL CALENDAR FOR APRIL.

Day of Week.	Day of Month.	Society Meetings.
Tuesday	April 1.	Georgia Pharm. Asso. — Annual Meet. at Savannah.
		Chicago Coll. Pharm.—Semi-annual Meet.
		Pittsburgh Coll. Pharm.—Trustees' Meet.
		Phila. Coll. Pharm. — Trustees' Meet.
Thursday	" 3.	Louisville Coll. Pharm.—Monthly Meet.
Tuesday	" 8.	Chicago Coll. Pharm.—Trustees' Meet.
		St. Louis Coll. Pharm.—Pharm. Meet.
Wednesday	" 9.	Cincinnati Coll. Pharm.—Business Meet.
Thursday	" 10.	Louisville Coll. Pharm.—Examination of Graduates. — Directors' Meet.
		Phila. Coll. Pharm.—Alumni Asso.
		N. Y. German Apothecaries' Soc., 160 Third Ave.
		Newark Pharm. Asso. — 3 P.M., room 4, Library Building.
Monday	" 14.	Rhode Island Pharm. Asso.—Quarterly Meet., 27 N. Main St., Providence, R. I.
Tuesday	" 15.	St. Louis Coll. Pharm.—Alumni Asso.—Trustees' Meeting.
		Phila. Coll. Pharm.—Pharm. Meet.
		Maryland Coll. Pharm. — Stated Meet.
		Kings Co. Pharm. Asso., 120 Myrtle Ave., Brooklyn.
		Pittsburgh Coll. Pharm.—Pharm. Meet.
Monday	" 28.	St. Louis Coll. Pharm.—Annual Meet.

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